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Iban Agriculture

A REPORT ON THE SHIFTING CULTIVATION OF HILL RICE BY THE IBAN OF SARAWAK

by

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Frontispiece

An Iban rice farm in central Sarawak

[facing title page]

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Foreword

I consider myself privileged to be asked to contribute a Foreword to this excellent book. My interest in it is doubtless nepotistic, but I feel certain that my admiration will be shared by others. The history of the matter may be briefly stated. In the summer of 1947 I was invited by the Government of Sarawak to make recommendations regarding projects for sociological research in the then newly-constituted colony. This book is a report on one of the projects which I then recommended.

Precisely because of the great wealth of ethnographic treasure that is to be found in Sarawak, my original task proved invidious. For every scheme of research that I proposed, there were half-a-dozen others for which I might easily have devised a plausible case. In Sarawak itself there were eager advocates for diverse rival projects.

Prior to 1947 ethnographic investigation in Sarawak had tended to be concentrated upon the peoples of the interior—the Kayan, the Kenyah, the Kelabit and the rest. At the same time there had grown up a notion that the peoples of the coastal area, such as the Iban, the Land Dayak and the Melanau, had become too sophisticated and detribalised to be of ethnographic interest. Anthropologists were expected to study savages. This I fancy was the general local view. But to me, as an outsider, it seemed paradoxical that with an impressively large literature on the Kayan (population 6,173), I could learn hardly anything about the Iban (190,326), or the Land Dayak (42,195), or the Melanau (35,560). Clearly, however glamorous and exotic the interior peoples might appear to the ethnographer, it was the coastal peoples whom I have mentioned, together with their neighbours the Malays (97,469) and the Chinese (145,158), who were of primary economic and political significance to the colony. I advised accordingly.

In 1947 a sociological study of the Malay community would have been politically inopportune, but in my recommendations I gave high priority to studies of the Iban, the Land Dayak, the Melanau and the Chinese. All these four proposals were accepted and have now resulted in published reports as follows:

IBAN	J. D. Freeman, *Iban Agriculture* (the present volume).
LAND DAYAK ..	W. R. Geddes, *The Land Dayak of Sarawak*. Colonial Research Studies No. 14 (H.M.S.O., London, 1954).
MELANAU ..	H. S. Morris, *Report on a Melanau Sago Producing Community in Sarawak*. Colonial Research Studies No. 9 (H.M.S.O., London, 1953).
CHINESE	Ju. K'ang T'ien, *The Chinese of Sarawak*. London School of Economics Monographs on Social Anthropology No. 12 (London, n.d. [1953])

and further publications are promised.*

* *e.g.* see Author's Preface below.

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114 In the outcome our state of knowledge has been transformed. Eight years ago Coastal Sarawak was, from the point of view of the social anthropologist, a *terra incognita*; today it constitutes one of the very few regions in the whole of South East Asia of which it can be asserted with some confidence that the social system is thoroughly understood.

The four authors I have named were all in Sarawak at much the same time and they were all working on projects which, in their initial conception, formed part of a co-ordinated scheme, but beyond that there was no rigid framework of enquiry. Each investigator has carried out a highly individual piece of research and each has described it in his own way. The result seems to me admirable. No one of these books depends to any serious degree upon any of the others; nevertheless they are, in important respects, complementary. The four peoples here described are neighbours one to another and the four accounts deserve study as a group.

Thus while Dr. Freeman's community is dependent exclusively on shifting cultivation, Dr. Geddes' group have a mixed economy of shifting and fixed agriculture; Mr. Morris was concerned with a plantation economy, Dr. T'ien with a "middleman's economy" which impinges on each of the other three but also embraces primary production of its own. The comparisons that may be drawn between these several studies are numerous and stimulating.

Dr. Freeman had certain advantages over his colleagues. He was in the field for the longest period; he had with him, in the person of his wife, a field assistant of quite exceptional qualifications; the community which he selected for special study proved to be unusually congenial and co-operative. The quality of the resulting research is obvious in every page of this book. On the anthropological side it breaks entirely new ground. There is scarcely any part of the information here presented which was hitherto available in ordinarily accessible published sources. But the book is of much more than purely local interest.

Shifting cultivation is a world-wide phenomenon; as a technique for growing rice it is general throughout Eastern Asia. In both cases the literature is extensive, tendentious, and based on wholly inadequate research. Here at last we have a specialised study, based on detailed first-hand observation over an adequate period. The results are of importance far outside the field of Sarawak sociology.

But a word of warning is necessary. This is a study of extreme conditions in which shifting cultivation reveals both its best and its worst features. The area of study is one in which virgin jungle is still plentiful with the consequence that simple economic restraints against a prodigal waste of resources are at a minimum. The Iban, here described, obtain a plentiful return for their labour at the cost of (literally) "burning up their capital". But capital waste is not a necessary feature of shifting cultivation.

In the past, critics have been quick enough to note the wastefulness of shifting cultivation; what they have often failed to recognise is that, given appropriate demographic conditions, agricultural methods such as these do provide an effective means of livelihood. The problem which faces the administrator and his agronomist adviser is not so much that of "abolishing shifting cultivation" as of creating social conditions in which there is an incentive to utilise resources efficiently without detriment to the basic fertility of the soil. The answers to such

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a problem cannot be discovered ready-made by interpolating facts derived from European experience into an Asiatic tropical context. To understand what constitutes economic motivation in any system of production we need to study the social context in which that system operates. Dr. Freeman's book, which is outstandingly free from bias, is one of the very few accounts of shifting cultivation which really makes plain what the fundamental issues are. I wish it every success.

E. R. LEACH.

Cambridge, June, 1955.

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Introduction

121 IN September, 1948, I was appointed to undertake anthropological research in Sarawak under the auspices of the Colonial Social Science Research Council. The Secretary of the Colonial Social Science Research Council laid down as follows the nature of my research work: "a study of a traditionally based, stable, Iban community based on shifting dry rice cultivation and not subject to undue land shortage . . . . as described in 'A Report on the Possibilities of a Social Economic Survey of Sarawak,' by Dr. E. R. Leach".[1]

114 I arrived in Sarawak in January, 1949, and remained in the Colony until June, 1951. For most of this period I was working among the Iban of the Baleh region of the Kapit District of the Third Division. Our base camp was at Rumah Nyala in Sungai Sut, but field research was carried on in many other parts of the Baleh region—particularly in the headwaters of the Mujong. Visits were also made to Iban communities of the lower, middle and upper Rejang, the Katibas and Ngemah (in the Third Division), and of the Saribas and Ulu Batang Ai (in the Second Division). In studying agriculture many months were spent living on Iban farms, and this report is based on intensive first-hand observation; all of my investigations were carried on in the Iban language.

144 The Iban (or Sea Dayaks) belong to an ethnic stock which Haddon has called
141 Proto-Malay. In brief, they are a brachycephalic people (average C. I. 83) of
142 short stature (average height 5ft. 2½ins.), with black, lank hair and cinnamon
197 coloured skin. Iban culture is basically proto-Malayan in type. Howell, our greatest authority on the Iban language, had no hesitation in classing it as "a dialect of the wide spreading Malay language." However, it is a dialect which has become intermixed with words borrowed from the various Borneo tribes with which the Iban have come into contact. Again, the Iban language, although it does contain a number of words that are Sanskrit in origin, has not been influenced by Arabic as have the languages of the peninsular Malays and the Menangkabau of Sumatra.

161 In Sarawak to-day, the Iban are the predominant element in a highly hetero-
162 geneous population. The total population of Sarawak as disclosed by the census of 1947 was 546,385, and of this number 190,326 (or 34·8%) were Iban. The past century has been for the Iban an era of expansion and they are now scattered over most of the interior zone of Sarawak—from the Samarahan river in the First Division to the Limbang river in the Fifth Division, about four hundred miles away to the north-east. However, the main concentrations of Iban population are to be found in the Second and Third Divisions.

244 Formerly, all of the Iban of Sarawak were shifting cultivators growing their
177 *padi* on hillside clearings in the tropical rain-forest. To-day, there are a number of Iban communities (particularly in the lower reaches of the Lupar, Saribas and Rejang rivers) who derive their livelihood from the cultivation of wet *padi* in

[1] Leach, E. R., "Social Science Research in Sarawak," Colonial Research Studies No. 1, London, 1950.

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riverain and deltaic swamps into which they moved following the establishment of Brooke rule. Some of these down-river communities have been subjected to prolonged European contact which has profoundly modified their way of life. However, the majority of the Iban still live from fifty to a hundred miles from the coast in hilly country that is drained by fast-flowing rivers. Most of these hill tribes have been little influenced by the West and remain pagan and pre-literate. It is with these Iban of the hinterland that this report is chiefly concerned.

This report then, is primarily an account of Iban methods of shifting dry rice cultivation in pioneer areas. It is important to note that it deals—in particular—with conditions existing in the Baleh, and with the social behaviour and customs of the Ulu Ai Iban inhabiting this region. This means that proper safeguards must be observed before applying any of the findings of this report to other Iban areas. Nevertheless, the systems it describes are generally typical of most pioneer areas (i.e. areas where virgin jungle is still being felled and farmed), and probably of about fifty to sixty per cent of the Iban population of Sarawak.

Iban agriculture and Iban methods of land utilization can only be understood in relation to the various corporate groups that characterize Iban society. For this reason this report begins with a brief account of the principal features of Iban social organization. However, these introductory paragraphs are no more than the most summary of prolegomena to the sections dealing with agriculture and land usage that follow. A comprehensive analysis of Iban social structure is being prepared for publication.

Again, because of limitations of space, only passing reference has been made to the elaborate *pali* cult upon which Iban agriculture is based. Upon this fascinating and important subject I was able to collect a great mass of material and it is my intention to discuss it fully in a separate monograph, which will stand as a companion study to the present report. As Haddon truthfully observed: "It is characteristic of the Iban . . . . that the whole of their life is permeated with religious conceptions, and indeed no distinction can be drawn in their daily life between technical and religious operations: they are equally necessary." Certainly, it is only when the inter-dependence of economics, social organization and ritual is understood that there can be any genuine appreciation of the nature of Iban agricultural practice.

This report is concerned with a single aspect of Iban life: their system of agriculture. This was, of course, but one of the many topics studied during the period of my field work and in due course papers and monographs on many other facets of Iban society and culture will be prepared for publication.

I would like to express my appreciation of the many ways in which the Government of Sarawak facilitated my research work, and I am especially grateful to His Excellency, Sir Anthony Abell, K.C.M.G., for his action in approving an extension of my tour so that I might complete certain studies of Iban religion and pay brief visits to parts of the Second Division.

It is difficult to speak too highly of the hospitality and assistance given to both my wife and myself during our stay in Sarawak. In particular our gratitude is due to: Mr. and Mrs. B. Baughman (Methodist Mission, Kapit), Mr. and Mrs. J. F. Drake-Brockman (D.O., Kanowit), Mr. T. Harrisson, Mr. R. W. R. Miller (Director of Agriculture), Mr. and Mrs. W. Nias (N.O., Sibu and Betong), Mr. A. J. N. Richards, Mr. P. Ringkai, Mr. P. Smith (D.O., Kapit), Mr. I. A. N.

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Urquhart (D.O., Kapit) and Dr. and Mrs. E. H. Wallace (Medical Officer, Third Division).

I am also immensely indebted to Iban too numerous to mention by name for their generous hospitality and great helpfulness at all stages of my research work. Better friends one could not wish to have.

For most valuable advice and assistance during months of preparation, during the whole of the time I was in the field and during the months which have elapsed since my return I am deeply indebted to Dr. Edmund Leach, of the University of Cambridge. My sincere thanks are also due to Professor Meyer Fortes (William Wyse Professor of Social Anthropology in the University of Cambridge) for much helpful counsel and criticism.

I would also like to express my deep gratitude to the Colonial Social Science Research Council for most generous and sympathetic support at all stages of my research work.

For collaboration in the field and much helpful discussion of the problems of shifting cultivation I have to thank Mr. B. E. Smythies (Forestry Officer, Third Division). I am also indebted to Mr. Smythies for permitting me to include two of his photographs as illustrations in this report.

For the drawing of the three Sketch Maps and Figure 1 I have to thank Mr. Hans E. Gunther (Cartographer, Department of Geography, Research School of Pacific Studies, the Australian National University).

Finally, for the sketches illustrating the text of this report and for constant assistance in the course of field research I am deeply indebted to my wife.

J. D. FREEMAN,

Canberra, 1955.

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Part I

AN INTRODUCTORY ACCOUNT OF IBAN SOCIAL ORGANIZATION

The Iban Long-House

1. The most salient characteristic of Iban social organization is the practice of long-house domicile. Anyone who has travelled in the interior of Borneo is familiar with the conspicuous shape of a long-house: an attenuated structure supported on innumerable hard-wood posts, it stretches for a hundred yards or more along the terraced bank of a river, its roof forming an unbroken expanse. Superficially viewed the Iban long-house has the appearance of being a single structural unit, and many casual observers have made the facile inference that the long-house is therefore the outcome of some sort of communal or group organization and ownership. For the Iban, at least, this inference is the very reverse of true. Among the various families which make up a long-house community there does exist a network of kinship ties, but the Iban long-house is primarily an aggregation of independently owned family apartments. The fact that these apartments are joined one to the other so as to produce a long-house detracts little from their essential autonomy. Indeed, the unbroken expanse of roof tends to conceal the fact that the Iban long-house is fundamentally a series of discrete entities: the independent family units of a competitive and egalitarian society.

2. A long-house, then, is made up of a series of apartments which are joined longitudinally one to the other so as to produce a single attenuated structure. Each of these apartments is owned and occupied by a particular family group, and these family groups are the basic corporate units of Iban society. The principal divisions of a family apartment are:

(*a*) the *bilek*, or living room;
(*b*) the *sadau*, or loft;
(*c*) the *ruai*, or roofed gallery;
(*d*) the *tanju*, or open platform.

All of these, and the general structure of an Iban long-house are shown in Figure 1, which is based on Rumah Tungku, Sungai Tiau, Kapit District.

The Family Apartment

3. (*a*) The *bilek*. The most important section of each apartment is the *bilek*, which is the family living room and the place where the valued property of the family is stored. Thus the *bilek* is the normal location for cooking, eating, sleeping and a multitude of domestic tasks. At the back of the *bilek*, and frequently along both its sides, are stacked huge jars (*tajau*), bronze gongs (*tawak*), and other kinds of heirloom property, which are important indications of the wealth and status of an Iban family. The *bilek* of a long-house always vary slightly in size,

and the width of the wall facing on to the *ruai* is some indication of the general social standing of the family that owns it. In Rumah Nyala, of the Sungai Sut, the smallest *bilek* was 12ft. 6ins. wide by 16ft. deep, while the largest was 23ft. wide by 17ft. 6ins. deep.

(*b*) The *sadau*. Above each *bilek*, and jutting out over the *ruai*, is the *sadau*, which is a kind of garret or loft. Here, in immense bark bins, is stored the grain (*padi*) grown by the members of the family. Also kept in the *sadau* are the various implements used in farming, and the mats, baskets and trays used when *padi* is being husked and winnowed.

(*c*) The *ruai*. The door of each family *bilek* opens on to another section of the apartment known as the *ruai*, and which—like the *bilek*—is the private property of the family to which it belongs. The *ruai* serves many purposes. Immediately adjacent to the wall dividing the *bilek* from the *ruai* is a section about three to four feet in width, known as the *tempuan lesong*. Here stands the *lesong*, a large wooden mortar, in which the women of the family pound their *padi* with long, hardwood poles, so to husk it. Adjoining this narrow strip comes another section, usually about 10 to 12 feet in width, and completely unobstructed by posts or partitions; it thus forms a corridor or gallery giving access to all parts of the long-house. It is, in fact, a kind of village street, and is used by all the members of the community as a general thoroughfare. Flanking this corridor or 'street' are the *padong ruai*, open, rectangular spaces, one of which belongs to each family apartment. These *padong ruai* are the main centres of community life and social intercourse. Like the *bilek*, of which it is an extension, each section of the *ruai* (composed of the three divisions just described) is owned by a single family. It is the duty of each family to keep its section of the corridor in good repair so that all may use it. But this general use involves no diminution of ownership rights; each family retains the right to cordon off its section of the *ruai* during the performance of certain rituals, and on other occasions to insist (on the pain of fine) that prohibitions governing its use be fully observed by all members of the long-house community. The boundaries of each family section of the *ruai* are clearly marked by the main supporting posts of the long-house structure.

(*d*) The *tanju*. Beyond the *ruai*, and so not covered by any form of roof, is the *tanju*, an open platform, usually about 20 to 25 feet wide. As with the corridor of the *ruai*, all the independently owned section of the *tanju* are joined to form an unbroken, raised platform, which fronts the whole long-house. The *tanju* is used for a wide variety of domestic tasks; in particular it is the place where *padi* is sunned prior to pounding.

4. It is the joining together of a number of different family apartments (each made up of a *bilek*, a *sadau*, a *ruai* and a *tanju*) that produces the attenuated structure known as a long-house. A long-house community is thus, in essence, a village consisting of a single 'street' of attached apartments. It is most important to realize, however, that each apartment is the private property of one family. Figure 2, depicts a typical Iban long-house, in this case, of ten family apartments. Let us now examine more closely the various family units of which a long-house community is composed, for these are the basic corporate groups of Iban social and economic life.

The Iban Bilek Family

5. In Government and other publications the family apartments of an Iban long-house are commonly referred to as 'doors.' A long-house, that is, is usually

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described as consisting of so many doors—10 doors, 20 doors, or whatever the number may be. This term has the advantage that it may be applied to any of the indigenous peoples of Borneo that live in long-houses, but in this report—which is exclusively concerned with the Iban—I propose to employ the term *bilek*. *Bilek* is the word which the Iban use to describe the separate, enclosed rooms of a long-house, but it is also a term used, by the Iban themselves, to refer to the family group which owns and occupies one apartment of a long-house, as, for example, in the phrase: "*Kami se bilek tabin magang*" ("We, a *bilek* family, are all ill"). The family group, described in the phrase: "*kami se bilek*" ("we, the members of a *bilek*"), is the basic unit of Iban social and economic organization. In the discussion that follows, I shall refer to this unit as *the bilek family*.

6. Although the Iban *bilek* family is essentially based on the elementary family, it is a unit which is primarily defined by the criterion of local residence. Its members—as a group—own and occupy one, and only one, of the separate family apartments of a long-house, each apartment consisting of a *bilek*, a *sadau*, a *ruai* and a *tanju*, as already described. The *bilek* family is also a domestic family; that is, its members constitute a single household. Food is prepared and cooked for the *bilek* family as a whole, and its members usually eat together, sharing a common meal. The *bilek* family is also an allodial unit, possessing both land and property in its own right. It is likewise an independent unit economically, cultivating its own *padi* and a wide variety of other crops. Ritually, each *bilek* family is a disparate unit with its own magical charms (*pengaroh*), its own set of ritual prohibitions or taboos (*pemali*), and its own special kind of sacred *padi* (*padi pun*). Among the Iban there are no clans or other large scale corporate kin groups, and so the *bilek* family is a social unit of primary and paramount importance.

7. The Iban *bilek* family has two dominant characteristics: it is a small group numerically, and a simple one genealogically. The average size is about 5 or 6 members, and 75% of families fall within the range of from 3 to 7 members. For the three long-houses[1] Rumah Nyala, Rumah Sibat and Rumah Tungku, all of the Baleh region (Sketch Map 1), the arithmetical mean was 5·75 persons per *bilek* family—with a mean deviation of 1·8. This accords closely with other data available for the Baleh region. The most prevalent type of family group is that containing three generations: that is, grandparents, parents and children; and all families are simple variants of this type.

8. Marriage among the Iban is *utrolocal*. By this term I mean to denote a system of marriage in which *either* uxorilocal *or* virilocal[2] residence may be followed, and in which rules of kinship and inheritance result in neither form of

[1]The quantitative data in the account of social organization that follows are based on a 'sample' consisting of three long-house communities: Rumah Nyala (25 *bilek* families) of Sungai Sut, Rumah Sibat (32 *bilek* families) of Sungai Melinau, and Rumah Tungku (50 *bilek* families) of Sungai Tisu; giving a total of 615 persons grouped into 107 *bilek* families. These three long-houses are discrete entities both territorially and socially, and although they were selected by non-random methods, they do constitute a representative 'sample' for an examination of the social organization of the Ulu Ai Iban of the Baleh region.

[2]The terms 'virilocal' and 'uxorilocal' have been used in preference to 'patrilocal' and 'matrilocal'. As Dr. Leonard Adam has pointed out ("Man," Vol. XLVIII, No. 13, 1948), there are etymological and logical objections to the terms 'patrilocal' and 'matrilocal,' and in the case of a society such as that of the Iban which lacks unilineal descent groups, the use of the terms 'patrilocal' and 'matrilocal' would be particularly misleading. Accordingly, I have used 'uxorilocal' to indicate that a married couple shares domicile with the *bilek* family of the wife, and 'virilocal' to indicate that a married couple shares domicile with the *bilek* family of the husband.

[The author apparently considers this to be a family type which is at variance with the OCM definition.-Analyst] 5

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

domicile receiving any sort of special preference. Thus, an analysis of several hundred different marriages showed that uxorilocal residence occurred in 51% of cases, as against virilocal residence in 49% of cases. This means that a child may be a member of *either* his father's *or* his mother's natal *bilek* family, and results in a system of what we may call *utrolateral*[1] filiation. By this term *utrolateral* I mean to denote a system of filiation in which an individual can possess membership of *either* his father's *or* his mother's birth group (i.e. the *bilek* family among the Iban), but *not of both at the same time*.

9. In any given instance it is the type of marital domicile (i.e. either uxorilocal or virilocal) followed by the parents that determines the *bilek* family to which a child belongs. It will be observed that two disparate criteria are implicit in the Iban system of filiation: (i) the criterion of descent, and (ii) the criterion of local residence. By birth every individual is potentially a member of either his father's or his mother's *bilek* family, but the necessity of a single place of local residence means that each individual does, in fact, become a member of *only one* of these two groups. Investigation showed that families in which children were living as members of their mother's birth group occurred to almost exactly the same extent as families in which children were living as members of their father's birth group. Thus, in the three long-houses: Rumah Nyala, Rumah Sibat and Rumah Tungku, households in which children were living as members of the mother's *bilek* family made up approximately 52% of the total, while those in which children were living as members of the father's *bilek* family comprised 48%.

10. Within the *bilek* family siblings have equivalent rights; in other words, they are parceners or co-heirs.[2] If a sibling marries out he thereby relinquishes rights of inheritance in his natal *bilek* family, but acquires rights in the *bilek* family into which he marries. This rule applies equally to men and to women. When divorce occurs an individual returns to his or her natal *bilek* family and resumes rights there; but widows and widowers do not return to their natal *bilek* families. Thus, an analysis of 52 cases showed that there were 26 widows or widowers living as members of their natal *bilek* families, and 26 who were living in *bilek* families of which they were members by right of marriage and local residence.

11. In every *bilek* family there is a senior member by right of descent, and this person—the *pun bilek*[3]— is just as likely to be a male as a female. Thus, in a sample of 102 *bilek* families: 54% possessed female *pun bilek*, while 46% possessed male *pun bilek*.

12. The *bilek*, with the exception of certain ritual objects, is a partible estate; and a sibling who remains in his (or her) natal *bilek* has the right to claim a proportionate share of the family inheritance, and set up a separate domestic unit. This is a common happening. Indeed, when two elementary families emerge

[1] *Utrolateral*, from the Latin, *uter*—'either of two.' (Ref. C. T. Lewis and C. Short, Latin Dictionary, Oxford, 1907, p. 1, 944, '*uter*, either of two, one or the other, one of two.').

For helpful discussion of the terminological problems raised by the Iban system of filiation, I have to thank Professor Raymond Firth, Professor Meyer Fortes and Dr. Edmund Leach; and I am particularly indebted to Mr. William Fagg (Hon. Editor, "Man"), who first suggested to me the form: *utrolateral*. My gratitude is also due to Professor F. E. Adcock, of King's College, Cambridge, for having examined and approved of Mr. Fagg's neologism.

[2] Adoption is a marked feature of Iban society, occuring in about 36% of *bilek* families. Under Iban *adat* adoption confers the same rights as birth.

[3] lit.: the 'founder' of the *bilek*.

within a *bilek*, partition always follows in due course. This precludes the development of joint or extended families, and nowhere in Sarawak did I encounter siblings—married and having adult children of their own—who were still living together as members of the same *bilek*. Again, my observations showed that partition always involves the break-up of a sibling group. When partition occurs one sibling and his (or her) family secedes from the ancestral *bilek* to found a new and independent household. Furthermore, this sibling is just as likely to be a man as a woman; thus, an analysis of 34 cases of partition showed that 17 founders of seceding families were males, while 17 were females. A fundamental feature of partition is that each part—after partition has occurred—is an autonomous unit in its own right, and not merely a constituent part of some wider corporate group. The partition of *bilek* families as it occurs in Iban society is thus a different process from segmentation as it occurs in societies based on unilineal principles.

13. In this brief introduction further analysis of the *bilek* family is unnecessary, for it is intended to do no more than adumbrate the social system upon which Iban agriculture is based. It is most important, however, to realize that the *bilek* family is the principal corporate group of Iban society and the fundamental unit in Iban economic organization.

The Long-House Community

14. *Bilek* families, as we have already seen, are grouped together in long-house communities. These communities vary in size from 4 to as many as 50 *bilek* families, the average size being about 14. Of a sample of 61 long-houses in the Baleh region[1]: (*a*) 25% contained fewer than 10 *bilek* families, (*b*) only 13% more than 20 *bilek* families, and (*c*) 62% consisted of from 10 to 20 *bilek* families.

15. All Iban long-houses are situated on the banks of rivers or streams navigable by dug-out canoes, and throughout the Baleh region one encounters a long-house about once in every two or three miles. Sometimes long-houses may be found within hailing distance of one another, though this is a distinctly rare event. Nowhere in the Baleh are there clusters of houses such as occur among the Land Dayaks of the First Division, or the Iban of the Rejang Delta.[2] The universal rule is that each long-house constitutes a single community; in other words, among the Iban the village and the long-house coincide. Moreover, traditionally each long-house community is an autonomous entity, not subject to the control of any other group. Every long-house is situated on part of a specified tract of land, and between long-houses there are always recognized boundaries, consisting in the main of unambiguous natural features such as streams or ridges. Each long-house then, is the domicile of a compact and independent community of families, and is situated on the bank of a river that is part of a specified territory over which these various families have either rights of access or ownership.

16. In Iban society there is no semblance of any sort of unilateral, exogamous descent group of the type usually described as a lineage or clan. Instead, every individual belongs to an extensive bilateral group which may be termed a kindred. By kindred, I mean to denote that cognatic category which embraces all of an

[1] i.e., the long-houses of the districts of Pengulu Jenggut and Pengulu Grinang, during the year 1948.

[2] At Bawang Assan, for example, some 18 miles down river from Sibu, there are six long-houses all within earshot of one another. All the people of this area cultivate swamp *padi*.

[See analyst's note on p.5, Cat. 8 116,— Analyst]

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

individuals's father's kin and all of his (or her) mother's kin.[1] It will be observed that in this formulation a kindred is defined as spreading upwards and outwards from an individual standing at its centre or base. Strictly speaking then, one should refer only to personal kindreds for it is evident that no two individuals will have precisely the same relatives. However, if the relationships between themselves are excepted, the unmarried and unadopted members of the same sibling group do have exactly the same kindred. We may think then of a kindred as radiating out bilaterally from the children of an elementary family to include all those persons to whom relationship can be traced through both male and female links. The Iban kindred, therefore, is in no sense a corporate group; rather it is amorphous, with its borders vaguely defined, and unnamed except by reference to its personal focus. However, in Iban society, where the largest corporate kin group is the *bilek* family, kindreds are of great importance for it is bilateral kinship which provides the framework for the formation of long-house communities.

17. The Iban are a rigorously monogamous people. Iban *adat* permits the marriage of any two individuals (male and female) on the same generation level who are not siblings. It is fully permissible for cousins of the first, second, third or any other degree to marry should they so desire; and those of the first degree may be either parallel or cross-cousins. Marriage with close kin is preferred, and about 75% of all Iban marriages are within the kindred (i.e. within the range of first to fifth cousin). Again, marriage within the long-house community is permitted, and occurs almost as frequently as marriage between individuals belonging to different long-house communities.

18. Within every long-house community there is a core group of *bilek* families linked by close ties of cognatic kinship. These families are commonly those of the founders of the community, and their apartments are usually side by side in about the centre of the long-house. For example, in Rumah Nyala, which contained 25 *bilek* families, there was a compact bloc of 8 apartments whose families were all joined by relationships which were, for the most part, between siblings or first or second cousins. Moreover, each of the other 17 *bilek* of Rumah Nyala was related to one or more of this central bloc of 8 families which constituted, therefore, a kind of core around which the rest of the long-house was grouped. A similar sort of structure is to be found in most Iban communities. It is important to note however, that while each family is related to at least one other family, it seldom, if ever, occurs that there is anything approaching complete inter-relatedness among the families of a community. Again, if it keeps within kindred relationships, a family may move freely from one long-house to another, and this is a not uncommon occurrence. We may say then that a long-house community is a local confederation of autonomous *bilek* families based on cognatic kinship.

19. It is important to realize however, that despite the high degree of inter-relatedness that may exist among its component *bilek* families, a long-house community holds virtually no property in communal ownership, nor is there collective ownership of farm land. Again, there is an absence of economic activity by the long-house community as a corporate group. Nonetheless, membership of a long-house does impose upon a *bilek* family many duties and obligations, for it is universally accepted that the well-being of any community

[1] W. H. R. Rivers, "Social Organization," London, 1924, p. 16.

is dependent on its ritual state, and for the maintaining of this all are responsible. Thus, joining a long-house always involves ritual incorporation.

20. Further, each long-house community possesses two important officiants. First comes the *tuai burong* or augur,[1] who takes auguries on all occasions of moment and who is generally responsible for the ritual well-being of the long-house. Every long-house community also has a *tuai rumah* or house headman, whose principal duty is the safeguarding and administering of the customary law. Within his community the *tuai rumah* is the custodian of *adat*, its juridicial warden and principal arbiter. In all other matters however—political, economic and ritual—his authority is negligible, and he is in no sense a chief. For neither of these positions is there any rigid dogma of succession: to both any male cognate may succeed.

Summary

21. Finally, we return to the intrinsic corporate groups of Iban society—its *bilek* families. These economically self-sufficient, allodial units are essentially autonomous, and have a prescriptive right to decide the whereabouts of their place of abode. This means that the Iban long-house community is an open and not a closed group, for its component *bilek* families are joined in free association from which withdrawal is always possible. At bottom, therefore, a long-house consists of a federation of independent families whose privately owned apartments have been built side by side to produce a single, attenuated structure. An appreciation of this basic fact is imperative to the proper understanding of Iban social organization. From the outset, an Iban long-house must be conceived of not as a unified group, but rather as a territorial aggregation of discrete units, not as a communal pavilion, but as a terrace of privately owned houses. Within the long-house *bilek* families are at parity with one another. Differentiation in terms of wealth and influence there always is, subordination there certainly is not. Jurally each *bilek* family is a power unto itself, managing its own affairs and acknowledging no other family to be its master. Thus, while a long-house is multipartite it is without any kind of hierarchical organization. Under Iban *adat* all men are equals. During his lifetime a man may acquire high prestige and become an honoured leader, but rank is not inheritable and there is no institution of chieftainship. Iban society is classless and egalitarian, and its members untrammelled individualists, aggressive and proud in demeanour.

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[1] The Iban possess an elaborate system of augury based, in the main, on the behaviour of certain sacred birds.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

Part II

LAND TENURE

Historical Introduction

22. At the end of the eighteenth century, the basin of the great Rejang River was a sparsely populated region. The whole of its southern flank (the part which is the particular concern of this report), the area, that is, drained by the Kanowit, Poi, Ngemah, Katibas and Baleh rivers, was an unbroken tract of primeval rain-forest, virtually untouched by man. Here and there along the main rivers of this region (the Rejang between Sibu and the Pelagus Rapids, and parts of the Baleh), there were settled communities—such as the Kanowits, the Tanjongs, and the Lugats—living in long-houses and cultivating the land. But these scattered peoples numbered not more than one or two thousand souls, and their activities had wrought little change in their natural environment. Most of this vast tract of forest was the territory of bands of nomadic Ukits and Bukitans, who relied on the plants and animals of the jungle for their subsistence, and who did not practise the cultivation of rice, or of any other staple crop. During the nineteenth century major changes were to happen. This largely inviolate natural region became the scene of human migrations which were to alter the entire face of the land. The newcomers—the Iban—came from the immediate south. They were a virile and truculent people, whose whole way of life was based on the cultivation of hill rice. For them, the virgin forests of the valleys of the Rejang held the promise of those bountiful and heavy harvests which are the foremost aim of all Iban endeavour. Moreover these forests—so sparsely inhabited—were the territory of no powerful rival tribe; they were there for the taking, and take them the Iban did. By any standards these great Iban migrations into the Rejang and beyond were the most momentous happening in the social and economic history of nineteenth century Sarawak.

23. At the commencement of the nineteenth century, there were probably no Iban living north of the southern watershed of the Rejang basin. To-day, there are more than 114,000 Iban[1] settled in areas northward of this line (Sketch Map 2). They constitute more than one-fifth of the total population of Sarawak, and more than three-fifths of the entire Iban population of the country. In both the Third and Fourth Divisions, they are now the dominant groups in mixed populations.

24. The documentation of the Iban migrations into the valleys of the Rejang is far from complete (especially in its initial stages); but such records as do

[1] In the Population Census of 1947, the Iban (or Sea Dayak) population of the Third, Fourth and Fifth Divisions is shown to be 113,498, while that of Brunei is shown as 1,330. The total population of Sarawak was 546,385, including 190,326 Ibans.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

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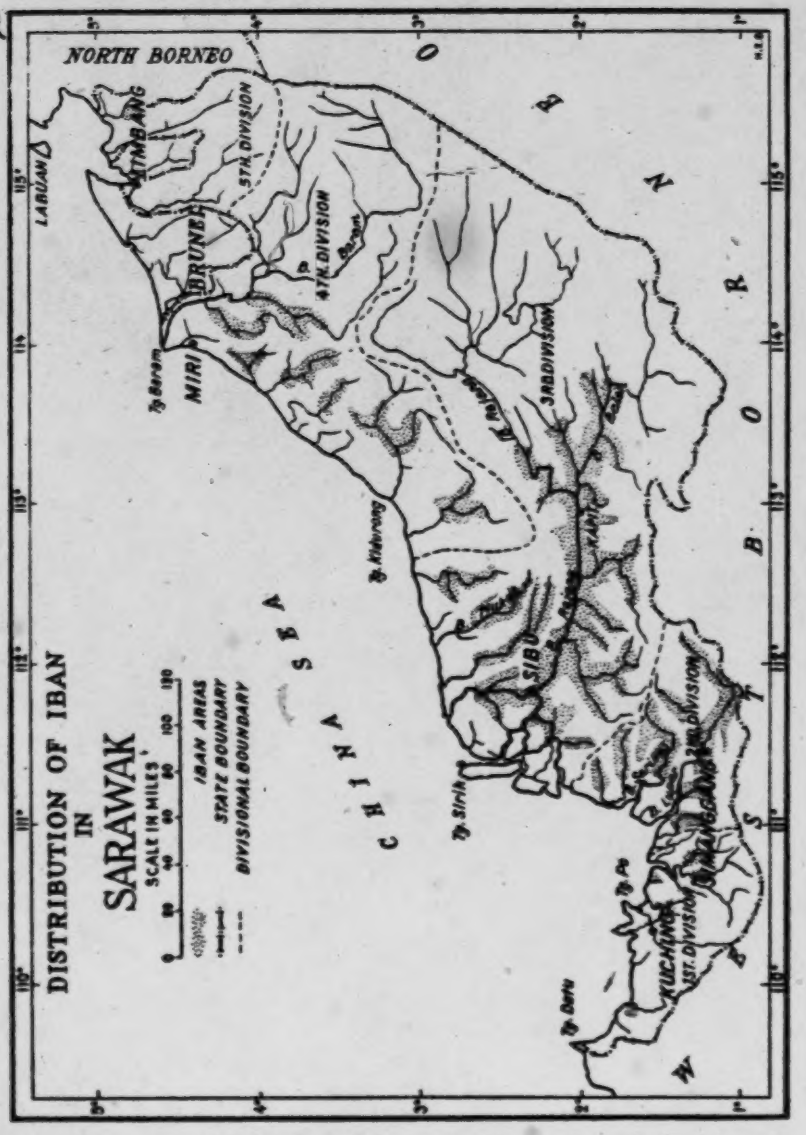

Sketch Map 2. Showing the Distribution of the Iban in Sarawak. (Based on the Census of 1947)

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

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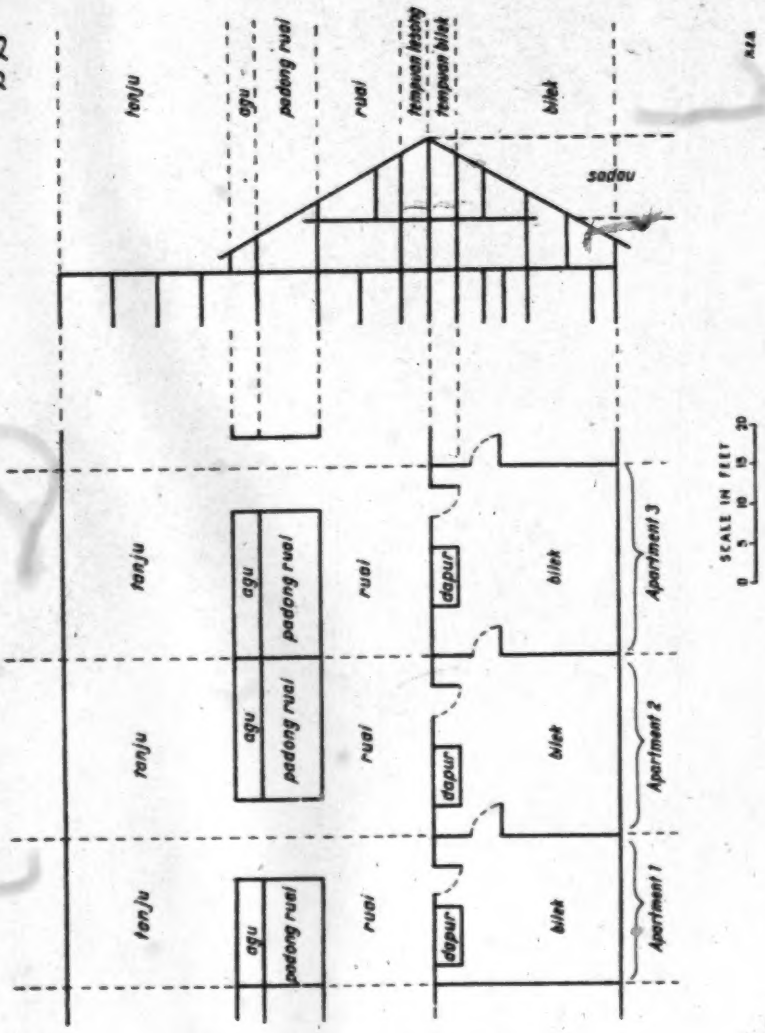

Figure 1. Plan of an Iban Long-house

k: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

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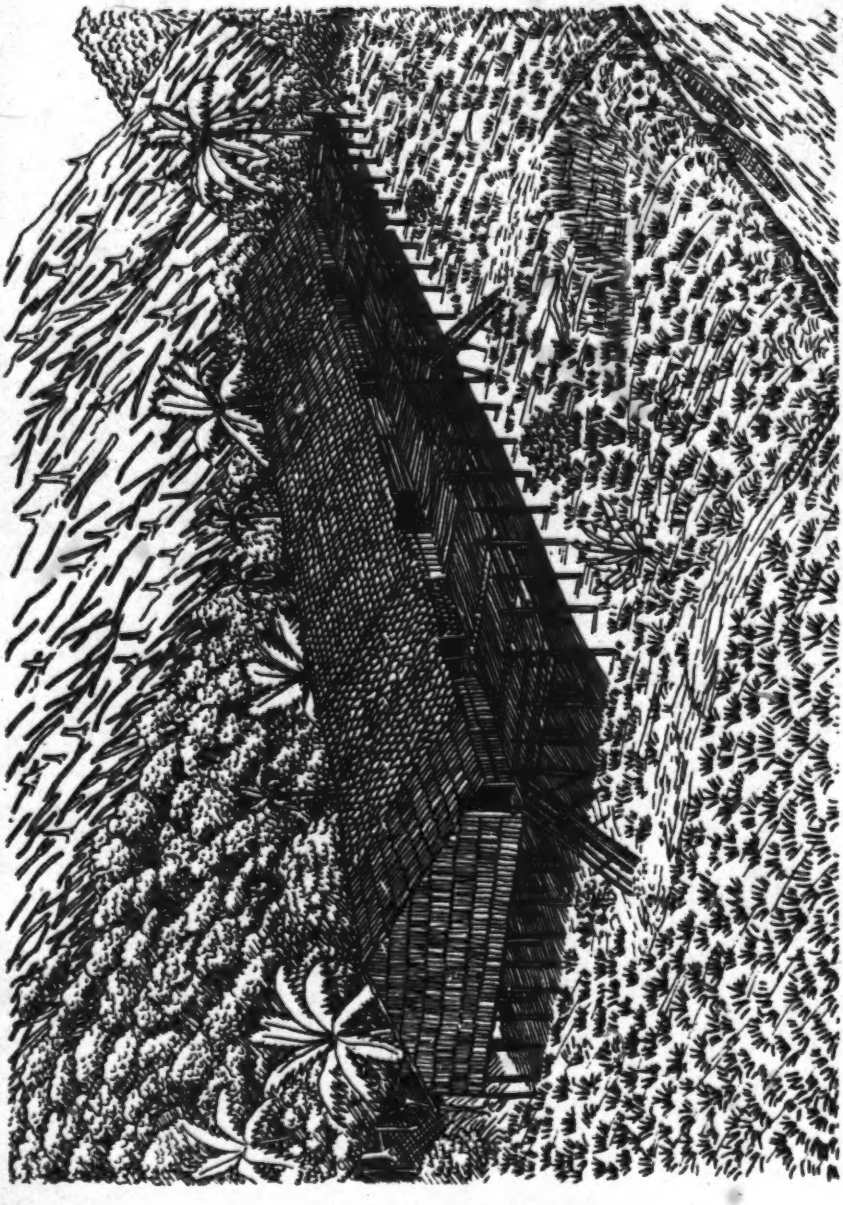

Figure 2. An Iban Long-house

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

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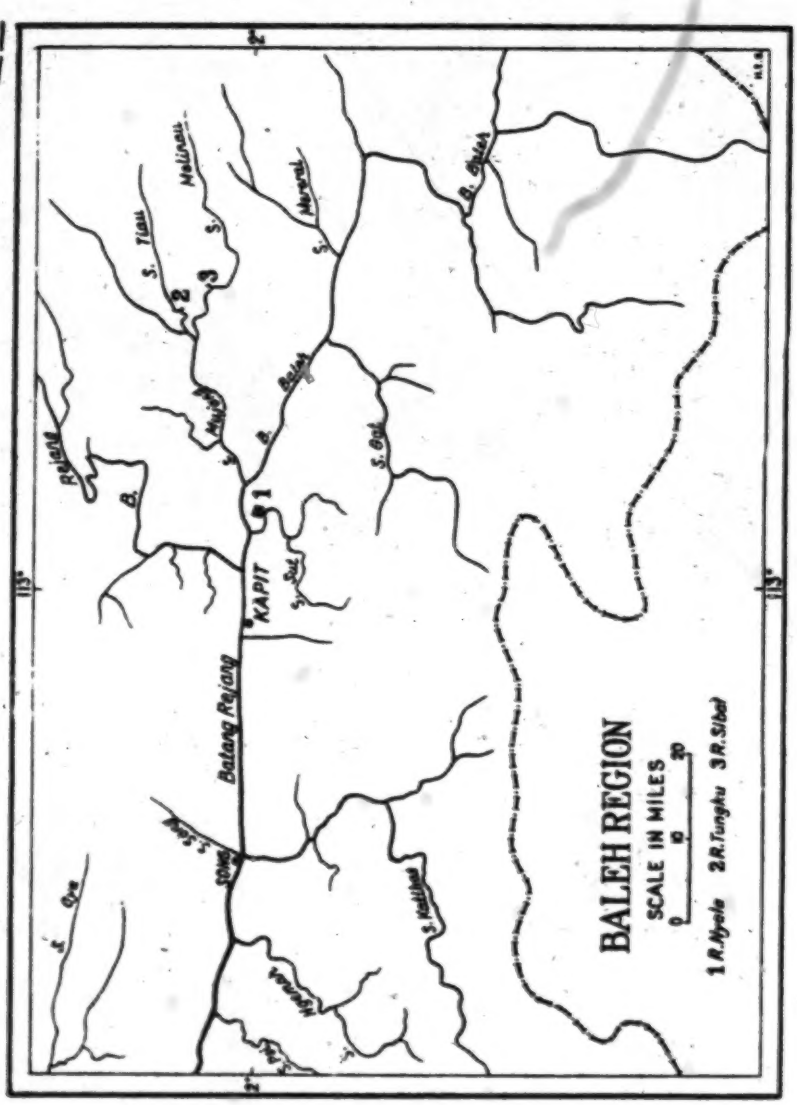

Sketch Map 1. Showing the Baleh Region and the Locations of the Three Long-Houses Rumah Nyala, Rumah Sibat and Rumah Tungku

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

exist[1] make it possible to outline the principal events. Two main movements may be discerned: 175 167

(*a*) from the Lemanak, Skrang and Layar rivers, into the Entabai, the Julau, and other headwaters of the Kanowit River;

(*b*) from the headwaters of the Batang Lupar, and the Kanyau (a tributary of the Kapuas River, now in Indonesian Borneo), into the Katibas River.

It is with the tracing of the latter movement that we shall be particularly concerned, for it was initiated by people whose descendants now occupy the Baleh (and most of the other tributaries of the Rejang, between the Ngemah and the Pelagus Rapids)—the area to which this report primarily refers.

25. The movement into the Katibas headwaters probably began during the early decades of the nineteenth century. It is not possible to establish a precise chronology. It is known, however, that two of the men who participated in this initial movement were the brothers Naga and Sumping, one of whom was the grandfather of the noted Pengulu Mata Ari, who died at Nanga Sut, in the lower Baleh, on 7th January, 1931,[2] when well over 80 years of age. Mr. E. V. Andreini (then Acting District Officer, Kapit), who visited him at Nanga Sut in 1926, estimated that Mata Ari was born in about 1840[3]. Early in 1850, in a letter to Francis McDougall, the Rajah, Sir James Brooke[4], refers to the already numerous people of the Katibas, Julau, Poi and Kanowit rivers, and by that date, the migrations had probably been in process for several decades. However, the first detailed account of the migration into the Katibas is contained in the journal of the Second Rajah (then Tuan Muda), kept during his arduous pioneer journey from the Batang Lupar to the Batang Rejang, via the Ulu Ai, Sungai Lubang Baya, and the Katibas. On the 5th December, 1861, when passing through the area, the Tuan Muda made this entry in his journal:

"This Katibas river must muster about 10,000 souls; and here is one instance of the rapid increase of inhabitants, as they came here from the Batang Lupar, in which river there are now more than can use the land according to the Dayak method of farming. And these inhabitants seem to be fast clearing every hill in the vicinity of the Katibas river."[5]

Again, several years later (in 1864), when discussing increases in Iban population, the Tuan Muda wrote:

"To offer one instance of the multiplying process, I will mention the upper Batang Lupar river, which has now a population of eighteen or twenty thousand souls residing on it, and has emitted a supply, about fifty years ago, to a neighbouring stream (a tributary of the Rejang),[6] from which a population has now increased to from ten to twelve thousand souls, without the aid of any admixture from other directions.[7]

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[1]During the period of my research in the Baleh I collected a series of genealogies which reached back to the initial stages of the Iban migrations into the Katibas River; later, in the Second Division, I collected further data, from quite independent sources, which fully confirmed my Baleh material. I hope to be able to publish all this material in detail at a later date.

[2]"Sarawak Gazette," 1931, p. 65.

[3]"Sarawak Gazette," 1927, p. 17.

[4]Sir James Brooke, in a letter to Francis McDougall, dated Penang, April 27th, 1850 (MSS., S. P. G. archives, London).

[5]Charles Brooke, "Ten Years in Sarawak," 1866, vol. 2, p. 192.

[6]I.e.: the Katibas River.

[7]Charles Brooke, 1866, vol. 2, p. 336.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

175 From this evidence, and from genealogies and traditions, it appears that the
167 Iban first began to percolate into the headwaters of the southern tributaries of the Rejang during the first and second decades of the nineteenth century.[1]

175 26. Soon after the middle of the century, those who migrated into the Katibas
167 had reached the main Rejang river. Temenggong Koh (now living in the Baleh
648 headwaters), makes the claim that his maternal grandfather, Ba, was among the
721 first Iban to emerge from the Katibas, and settle on the banks of the Batang Rejang. Their first settlement was in the vicinity of Sungai Song (on the true right bank of the Rejang); but later they moved down river to near the mouth of the Poi, under the instructions of Mr. H. Steele, who since 1851, had been in charge of the Government fort at Kanowit.[2] Following the murder of Steele and Fox, in June, 1859, the Iban of the Katibas joined forces with the Tuan Muda in his punitive expedition against the Kanowits (and others involved), in the nearby Kabah river. This event aggravated the existing enmity between the Iban and the peoples of the upper Rejang (the Kajangs, and the Kayans), and led to retaliatory raids. In December, 1861, when travelling the lower reaches of the Katibas, the Tuan Muda passed the blackened posts of an Iban house which had been burnt during a recent 'treacherous attack' of the Kayans. The Katibas Iban gained their revenge, and most drastically, during the great expedition of 1863, as members of a force of about 12,000 men (from all parts of the country), which, led by the Tuan Muda, ascended the upper Rejang, and launched a *crushing attack on its inhabitants*. The main objective of this expedition was to avenge the murder of Steele and Fox; but many only very remotely connected with that outrage, suffered in the mass retribution. The Iban vanguard penetrated well beyond the Bakun Rapids of the Balui, taking heads and captives, burning and pillaging. Never again were the Kayans and other inhabitants of the headwaters to offer serious resistance to the Iban occupation of the lower and middle sections of the Rejang. Even prior to 1863, the Iban had begun to occupy land on the banks of the Rejang, above its confluence with the Katibas, for the Tuan Muda mentions that in May, 1863, after passing the mouth of the Katibas, he came upon a few Iban 'farming-grounds' which had been abandoned several years before in consequence of Kayan attacks. With this exception however, it was an uninhabited region, with 'a vegetation luxuriant to the wildest extent.' At Kanowit, in October, 1863, a formal peace was made with the Kayans and other tribes of the interior. The Iban were now free to resume and extend their occupation of the main valley of the Rejang, with its 'rich, untouched vegetation,' and to infiltrate into its numerous minor tributaries.

175 27. A very significant feature of the Iban migrations into the Rejang basin,
167 was the special relationship—symbiotic in character—which existed between the
648 Iban and the Bukitans. The nomadic Bukitans, whose ancestral territory the Rejang was, acted as guides and allies to the more numerous and more accomplished Iban, and under Iban influence they gradually came to follow Iban

[1]The movement into the Kanowit headwaters appears to have occurred some years later than the movement into the Katibas. Writing early in 1859, the Tuan Muda remarked of the Kanowit River: "This stream is inhabited by Sea Dayaks, who have for the last fifteen or twenty years been migrating from the Saribas and Skrang districts for the purpose of obtaining new farming grounds. These exoduses took place overland between one river and another. Such parties would do their four or five days' march, then build their houses, and proceed to farm for one or two years, after which they would recommence their march, and so on . . ." (Charles Brooke, 1866, vol. 1, p. 327).

[2]Francis McDougall, in a letter dated 13th October, 1851 (MSS., S.P.G. archives, London).

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

methods of cultivating rice, and ultimately, to live in long-houses of their own making. The nomadic Ukits, on the other hand, were inveterate opponents of the Iban, and contested their advance at many points, especially in the Baleh area.

First Entry into the Baleh

28. During the decade that followed the peace-making of 1863, the Iban continued to advance, and in 1874, the Government deemed it advisable to build a fort on the low-lying headland that marks the point where the Baleh joins the main flow of the Rejang. Three years later, however, the station was moved several miles down river to its present site at Kapit. No attempt was made to restrain the Iban, and by 1880, the lower reaches of the Baleh river had become quite thickly populated by them. How desirable to Iban eyes must have appeared this great expanse of virgin territory. A shifting-cultivator's paradise! But it was not to be—at least, not immediately. Head-hunting was too deep-rooted an element of Iban culture for it to be abandoned easily. For a period, Government inspired, or Government sanctioned expeditions had provided an outlet, but when these came to an end, privately organized excursions began to take place once more. But the suppression of head-hunting was a major aim of Government policy. When Government did intervene in the Baleh, the Iban responsible refused to submit to the Rajah's authority, and retreated (with their families) to the inaccessible and precipitous ranges at the head of the Mujong (one of the major tributaries of the Baleh river). Two Government expeditions were necessary (both in 1881), before the rebels were forced into surrender. The rebels were punished by heavy fines, and ordered to live below the Kapit fort, and the whole of the Baleh was cleared of Iban, and closed to further settlement.

29. Not for long, however, were the Iban to be contained below Kapit fort. Within less than ten years, they began to move overland (by way of Sungai Kapit), to the headwaters of the Sut—a tributary of the forbidden Baleh. When in July, 1899, Kirkpatrick (the Resident at Kapit), paid a visit to the Sut river, he found that its valleys contained 290 doors of Iban, and 21 doors of Bukitans.[1] Their occupation of the area (with its attendant cultivation) was accepted as a fait accompli, and no attempt was made to expel them.

30. At this same period other sections of the Iban people were embarking on further migrations to the northward—beyond the confines of the Rejang. These movements are described by the Resident, Third Division (H. F. Deshon), in his report to the Rajah for the year 1900: 'During the latter part of 1899, and the commencement of 1900, Your Highness was pleased to accord permission to Dayaks in the Second and Third Divisions to remove without restriction and settle in the rivers on the coast between Igan and Kadurong. About 1,000 doors have availed themselves of this permission, and are now distributed in the Oya, Mukah, Balingian, Tatau and Bintulu rivers, but mostly in the last three named."[2]

31. But to return to the Kapit district, which is our particular concern. During the early years of the twentieth century, the migration overland from the main Rejang river, into the headwaters of the Sut continued. Thus, the Rajah Muda (C. V. Brooke), following a visit to the Sut river, in May, 1904, reported: 'It is

[1] "Sarawak Gazette," 1899, p. 284. The 290 Iban families would represent a population of about 1,650.

[2] "Sarawak Gazette," 1901, p. 59. The 1,000 doors would represent a population of about 5,700.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

175 surprising the number of Dayaks who have moved into the Sut river in recent
167 years. I made all recent arrivals pay to Government $10 a door as guarantees as to
648 future good behaviour, and ordered all down river Dayaks to clear out and return
721 to their own country."[1] At this period, the principal aim of Government policy was to control the head-hunting proclivities of the 'turbulent' Iban, and to prevent attacks being made on the Kayans and other tribes of the upper Rejang. Such restraints as were exercised over Iban occupation of new land, had this end in view. There is no evidence to suggest that any cognizance was taken of the possible ill effects of Iban methods of shifting cultivation. In 1904, the Government was again obliged to attack a group of Iban (men, women and children), who, in defiance of the Rajah's orders, had retreated to Bukit Batu—the mountain fastness at the head of the Mujong river. The attack (directed by Charles Hose, then Resident, Third Division) was successful, and the rebels were compelled to return to the Sut, and to other down river areas.[2]

Second Entry into the Baleh

175 32. For more than ten years, the stream of migration overland from the
167 Rejang into the headwaters of the Sut river had continued. It is clear, that from the very beginning this was nothing more than a way of circumventing the Government ban on the settlement of the Baleh. The main entry being blocked (i.e. by Fort Sylvia, at Kapit), the Iban resorted to a more circuitous route. Early in 1905 they decided to put the Government ban to the test. A large group (led by Pengulu Merum), paddled down the Sut, emerged into the main Baleh river, and settled its banks to about as far upstream as the mouth of the Mujong (i.e. for some five miles above the mouth of the Sut).[3] They must have numbered about 700 souls; an official report mentions that there were 128 doors grouped into 14 different long-houses.[4] Immediately after their arrival they set about the felling of the forest, and the cultivation of their *padi*. This action was a deliberate flouting of Government orders, and the Resident at Kapit at once sent word that all those 'living in the Baleh above the mouth of the Sut,' would have to leave the area at the end of the harvest (i.e. in about April, 1906).[5] In December, 1905, the Resident (I. Kirkpatrick) visited the Iban who were farming in the Baleh, and issued these orders in person.[6]

33. The Iban, in contravening Government regulations, had certainly hoped that they might ultimately get their own way; they can scarcely have expected the sudden volte-face in Government policy which occurred the following year when the aging Rajah visited Kapit. At a meeting held in Kapit on 25th April, 1906, the Rajah announced to the Iban that:

"The Baleh river should be open for occupation by Dayaks as far as the mouth of the Gat river; that no permanent dwellings would be permitted in the side rivers; and that anyone putting up a permanent dwelling beyond the boundary of the Gat river, would be dealt with severely."[7]

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[1] "Sarawak Gazette," 1904, p. 142.

[2] "Sarawak Gazette," 1904, p. 184; also, Hose and McDougall, "The Pagan Tribes of Borneo," 1912, vol. 2, p. 301 seq.

[3] Merum himself, who claimed that he had obtained permission from the Resident, Third Division, settled at Batu Bansa—near the present site (i.e. 1951) of Pengulu Jenggut's long-house; "Sarawak Gazette," 1905, p. 230.

[4] "Sarawak Gazette," 1905, p. 230; and 1906, p. 67.

[5] "Sarawak Gazette," 1906, p. 15.

[6] "Sarawak Gazette," 1906, p. 67.

[7] "Sarawak Gazette," 1906, p. 171.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

34. The Rajah's announcement was followed by a scramble for possession. Most of that area of the Baleh now open for settlement was still unoccupied, and furthermore, it was covered with the virgin forest so dear to the Iban cultivator's heart. Something like a land-rush ensued. Within less than three months, 1,500 *bilek* families had moved into the Baleh, and were "busily engaged quarrelling over farm-land."[1] They had mostly come from the Rejang and its tributaries, between the Katibas and Kapit. In his report to the Rajah, for the year 1906, the Resident, Third Division (C. Hose) described the situation in these words: "The Ulu Ai Dayaks having obtained permission from Your Highness to live in the Baleh, last May a rush was made for that river by all the Dayaks living near Kapit, and it was not until they found that the whole of the farming land in the Baleh had been occupied that the rush ceased. A few have entered the Sut, and some say that they intend to return to the Yong and Chermin rivers again after the harvest, as it is impossible to find sufficient land in the Baleh for their requirements."[2] By the end of 1907, the population of the Baleh had risen to some 1,903 doors, and, according to the Rajah Muda it was the "most thickly populated of any of the Dayak districts."[3]

35. But the Iban cultivator's appetite for fresh tracts of virgin forest was far from satiated. The Rajah Muda foresaw this as early as October, 1907, when he wrote: ". . . . farming land in a few years time will be very hard to get in the Baleh, and the Dayaks will be getting restless to move elsewhere. This will mean that they will want to get into the Mujong, the Gat, or in the main Baleh, above the Gat."[4] This prediction was very swiftly fulfilled. The Rajah's opening of the Baleh seems to have done little to allay Iban ambitions; even more desirable territory, in the tributaries of the Baleh, now lay invitingly close at hand. Moreover Government surveillance was now far less effective, for the fort at Kapit had been passed by, and strategically, the whole situation had changed. An observer who visited the area in 1908 reports that although there was then in the Baleh "plenty of good farming land as yet untouched," the Iban were already planning to move into the Mujong.[5] The occupation of the Mujong—in direct defiance of the Rajah's orders—began in the years 1909 and 1910. Once again it was led by Pengulu Merum, who was doubtless emboldened by the memory of his successful coup of 1905, for on that occasion, although he took the law into his own hands in occupying the Baleh, his action promptly received the seal of the Rajah's approval. Iban testimony shows that following these events the prestige of Merum was tremendous.[6] At about the same time, a similar movement into the Gat river began to take place, and beyond the Gat into the upper reaches of the Baleh.

36. This period of Iban expansion (i.e. from 1905 onwards) was not marked

[1] "Sarawak Gazette," 1906, p. 222.
[2] "Sarawak Gazette," 1907, p. 59.
[3] "Sarawak Gazette," 1908, p. 13 and p. 79.
[4] "Sarawak Gazette," 1907, p. 245.
[5] "Sarawak Gazette," 1908, p. 314.
[6] It is important to note that Pengulu Merum was a Government appointee. His history is an interesting one, for he was one of the principal members of the party of rebels that defied Government in 1881, at Bukit Batu. This was following the murder of a Malay in Sibu by Merum and others. After a lapse of 20 years, however, and while he was still living in the S. Sut, Merum was elected to the position of Pengulu. In April, 1906 (at the same meeting at which he announced the opening of the Baleh to the Iban) the Rajah appointed Merum to be Pengulu Ulu—thus making him responsible to Government for the supervision of Iban settlement in the Baleh headwaters.

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175 167 721 36. This period of Iban expansion (i.e. from 1905 onwards) was not marked by peaceful absorption in the cultivation of *padi*, instead there was a sharp recrudescence of head-hunting. During previous years, head-hunting incidents had occurred fairly regularly, but Government had been able to maintain at least a semblance of control by inflicting heavy fines on the transgressors. The occupation of the Baleh ushered in a new period which was to end in widespread and serious disaffection. A glance at the map will show the special geographical features of the Baleh; from its various tributaries there were feasible overland routes to the headwaters of the Rejang, the Mahakam and the Kapuas, and all these regions were inhabited by enemy tribes. The possibilities before the enterprising head-hunter were endless. As early as 1905, the Resident at Kapit reported to the Rajah Muda in these terms: "I cannot too strongly express to your Highness the restlessness which prevails in the upper waters. The Kayans are unable to farm or work away from their houses for fear of attacks from Dayaks, and even now they are very short of rice. They even talk of removing from the Rejang if this state of affairs continues as they are unable to obtain a livelihood."[1] This state of affairs was to persist until about 1919.

37. The movement of Pengulu Merum and his followers into the Mujong did not, at first, encounter any serious Government opposition, and by 1913, they had penetrated far inland and were farming the virgin hill sides of the Melinau and Tiau—two tributaries of the Mujong river.[2] It was the prelude to organized and open defiance of the Rajah's authority. In other parts of the Baleh similar unsanctioned expansion was taking place. There was steady infiltration into the Gat, and in 1913, another group of Iban, far exceeding the limits laid down by the Rajah in 1906, ascended the Baleh and entered the Merirai river.[3] These unauthorized movements were coupled with further illicit head-hunting, and finally the Government was impelled to take action. In February, 1915, a punitive expedition was launched against the Iban of the Gat river, and three months later, a large Government force attacked Merum and his followers, who had taken up a defensive position on Bukit Salong (in the Melinau headwaters), and declared themselves to be beyond the Rajah's power. They had believed their stronghold to be impregnable, but it quickly fell before the shelling of the Rajah's force, and its occupants fled, scattering to elude their attackers. Soon after this defeat, Merum and the majority of his followers surrendered themselves at Kapit, but there were some who still refused to recognize the Rajah's authority, and who joined the rebels of the Gat. For the most part, they were young men intent on further head-hunting and trouble-making.

38. Sporadic incidents continued to occur, but in April, 1916, a large party of rebels bound on a head-hunting foray, were surprised at Nanga Pila, in the upper Rejang, by a Government force, which, though numerically inferior, was well armed with rifles. In the encounter that ensued about 200 of the Iban lost their lives, and many were wounded. But even this severe defeat did not entirely quench the fiery spirits of the rebels; and the year 1918 saw a series of minor, though flagrant incidents. In March of that year, for example, a party of Gat rebels killed three Kayans within the very precincts of the Kapit fort.[4] In 1918, the Government again took action, by dispatching an expedition to the Gat for a second time. A large force (complete with Maxim gun) ascended the Gat river,

[1] "Sarawak Gazette," 1905, p. 230.
[2] "Sarawak Gazette," 1914, p. 27.
[3] "Sarawak Gazette," 1914, p. 43.
[4] "Sarawak Gazette," 1918, p. 91.

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destroying long-houses and *padi* fields, and driving the last of the rebels over the border, where they were in due course interned by the Dutch authorities, and handed over to the Government of Sarawak. The entire Baleh region was now empty of Iban. Those occupying the main river and the Mujong had been removed to below Kapit during the year 1915; and those in the Sut river (who were suspected of assisting the rebels of the Gat) had been compelled to leave early in 1918.

The Third Entry into the Baleh

39. The Baleh remained deserted during the next three years, until in 1922, the Iban were granted permission to re-occupy the river. And so for a third time these headstrong people, with their insatiable appetite for fresh areas of virgin forest, moved into the valleys of the Baleh. Both in the 1870's and in 1905, they had acted on their own initiative in occupying the Baleh, and even after the Rajah's approval had been granted in 1906, they were left very largely to their own devices. In fact, most of these Iban of the headwaters were then still a power unto themselves. It is abundantly clear—whatever may have been their protestations—that most of them gave no real recognition to the Rajah's sovereignty, but instead were temporizing as best they could, with a power which was to them both alien and irksome. By 1922, the situation had changed; the defeat at Nanga Pila, and the Mujong and Gat expeditions had forced the rebel Iban into submission, and for the first time, something like effective government was established. The re-occupation of the Baleh was carried out under close Governmental supervision.

40. However, not all of the Iban were involved in the disaffection we have been discussing; other groups, with more discerning leaders remained wholly obedient to the Rajah's authority. Thus in 1913, when Pengulu Merum and his followers were moving into the Melinau river in wilful defiance of Government orders, Koh and his followers, in response to the Rajah's suggestion, left their land in the Sungai Sut, and moved down river to Nanga Dia—a short distance below the Kapit fort—where they began the systematic planting of rubber and cassava. The Government had hopes that other Iban from the Baleh would follow this "good example." In that same year the Rajah appointed Koh to be a Pengulu. Koh, himself, was a recently reformed head-hunter—some ten years previously he had led a large scale raid against the Badangs (a tribe of Kenyah) of the Plieran, and then lived, for a time, as an outlaw in the remote headwaters of the Sut. But having acquired the prestige of a successful head-hunter, he soon came to adopt other tactics. He had the intelligence to realize the essential superiority of the Rajah's power, and the foresight to perceive the inevitable outcome of any attempt to defy that power by trial of arms. Accordingly, compliance and then active co-operation with the Rajah's government, became his guiding principles.

41. When, in 1922, the re-occupation of the Baleh took place, Pengulu Koh was given pride of place at the head of the river, while his son, Semada,[1] and his son-in-law, Grinang (both newly appointed Pengulu) were allotted similar positions in the Mujong and Gat rivers. Such a position at the head of a river was highly prized, for it meant direct access to the immediately adjacent areas of unexploited virgin forest. But the privileges of the Pengulus were accompanied by certain duties. In the main Baleh river, and all its major tributaries, points

[1]Pengulu Semada has now been succeeded by Pengulu Sibat, his sister's son.

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were fixed by Government, beyond which no Iban settlement or farming was permitted. It was one of the duties of the Pengulus to guard these points, and to report to Government any breach of the regulations. By October, 1923, about 95 long-house communities had re-occupied the Baleh and its tributaries.[1] Government regulations covering the authorized limits of Iban settlement were laid down, and—at the outset—strictly enforced. In January, 1924, for example, Pengulu Grinang reported that a group of Iban had entered Sungai Puru (a side stream of the Gat) in defiance of the regulations; in the following April, the long-house of these law-breakers was burnt down by the District Officer, Kapit, and a party of Rangers.[2]

Iban Rights in the Baleh Region

42. This leads us to the important point that none of the Baleh Iban (or, for that matter, any of the Iban living north of the main Rejang river), possess prescriptive or truly traditional rights over their lands. The territory from the mouth of the Rejang to Kidurong Point was ceded to the First Rajah by the Sultan of Brunei, in 1861. Thus the whole of the Baleh region had passed into the hands of Government at least ten years before its first occupation by the leading Iban migrants from the Second Division. Furthermore, from the very commencement of Iban settlement in the Baleh there has been a Government station in the immediate area—the first fort having been established at Nanga Baleh in 1874. To-day, many Iban claim that they have traditional rights over Baleh land, saying that it has been handed down from their remote ancestors. Europeans unacquainted with the detailed history of the Kapit District are apt to be misled by this specious claim, and if Government policy in the area is to be properly implemented, it is of cardinal importance that the historical facts be fully established, and clearly understood by all.

43. All re-settlement in the Baleh was under Government supervision, each long-house community having land formally apportioned to it. The period was also marked by widespread re-organization of long-house communities. Those families which had remained faithful to the Rajah's authority were allowed to return to more favourable sites than those who had openly defied Government or tacitly supported the rebels. Consequently there was much re-grouping of families into new or different communities. In general then, the land tenure situation, and the present dispersal of long-houses in the Baleh area, are the direct outcome of the historical events we have been discussing. In other words they have been determined primarily by Government policy, and should not be viewed as being the spontaneous expression of tendencies inherent in Iban society.

44. When re-settlement took place each of the various long-house communities was allotted a specified tract of land.[3] This tract usually bordered a section of one of the main rivers or streams, and boundaries with neighbouring long-houses were either tributary streams or well-defined ridges that demarcated a watershed. Re-occupation was en masse, for during the first year 95 communities (i.e. probably between 1,300 and 1,400 *bilek* families) established themselves in the Baleh and its side streams. Then, as now, there was no detailed

[1] "Sarawak Gazette," 1924, p. 22.
[2] "Sarawak Gazette," 1924, p. 93 and p. 198.
[3] "Sarawak Gazette," 1924, p. 22.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

survey of the Baleh area, and although the allocation of territories was under general Governmental surveillance, there seems to have been no formal registration of titles. In the absence of a detailed survey, it is not possible to give accurate figures for the extent of the various long-house territories, but from those which I was able to inspect it seems that they ranged from about five to fifteen square miles.

Principles of Land Tenure among the Iban

45. As already noted the territory allotted to a long-house community is not held in communal ownership, but rather all the *bilek* families of the community have equal rights of access to the land. That is, these rights of access are held in common as against the members of all other long-houses. Actual family ownership is established by the felling of primary jungle (*kampong*), and this is always undertaken by individual *bilek* families. By clearing the virgin forest from a tract of land, a *bilek* family secures full discretionary rights over the secondary jungle (*daman*) which springs up within a few months of the first *padi* harvest, and thereafter, for as long as it remains in the local community, this *bilek* family retains ownership of all land, for the initial cultivation of which it has been responsible. Once land has been acquired in this way it becomes part of the general property of the *bilek*, and is inherited in the same way as are the other valuables of the family. That is, land is inherited by the *bilek* family as such, and all those who remain members of this local group possess parcenary rights in the land which it has acquired. Marrying out of one's natal group involves the relinquishment of these rights, and the assumption of similar interests in one's marital *bilek* family, these circumstances applying both to men and to women.

46. When the partition of a *bilek* family occurs, both sections retain the right to farm land acquired prior to this event. There is thus no formal partition of the land, as there is of the moveable effects of the *bilek*, but rather a joint sharing of rights of access to the secondary jungle that was once common property. The usufruct of this secondary jungle is decided in conference between the two sections of the *bilek* when the occasion arises. In course of time therefore, it is parcelled out for re-use, and in this way each part of the original *bilek* family establishes presumptive tenure of the *daman* land which it puts into cultivation for a second time. However, all virgin jungle felled by either section subsequent to partition is independently owned from the outset.

The Settlement of New Territory

47. When pioneering new territory it is customary for a group of *bilek* families (the number may vary from three or four to more than a dozen) to work side by side. This has many advantages; it means that animal pests are kept under better control, that there is opportunity for the formation of co-operative groups (based on the principle of reciprocity) which make easier the formidable task of felling several acres of primeval rain-forest, and that all the families concerned can live together in a single *dampa*, which, though smaller in scale, is constructed on exactly the same principles as a long-house. The Baleh country is very broken and extremely well watered, with innumerable side spurs rising abruptly to straggling and uneven ridges that vary from several hundred to a thousand feet and more in height. The usual pattern of exploitation is for a group of *bilek* families to begin in the lower reaches of a tributary stream. As far as possible, each *bilek* family selects a separate spur, and commencing at the foot moves up it until the crest of the ridge is reached. The average area of an Iban farm (*umai*) is

between four and five acres, and as it is usual to farm virgin land for two years in succession, a single spur will often keep a *bilek* family occupied for three or more years. Once jungle at the foot of a spur has been felled and farmed, the *bilek* family responsible has presumptive right over the unfelled, primary jungle higher up on the same slope. Land disputes are rare among the Baleh Iban, but of the several cases which did come to my attention, most were concerned with one family 'jumping' another's claim by moving on to the upper slopes of an already occupied spur. In each case the interloper was judged to be in the wrong, and compelled to withdraw.

48. In settling such disputes two main principles are recognized. First, stream beds—however small—are accepted as natural and sacrosant boundaries, and to cross one of these in the face of someone else's prior claim is to flout *adat*. This maxim was well put by Temenggong Koh, in an admonition (which I happened to overhear) to several of the men of his house: "If you quarrel over land," he said, "follow the streams for they were devised by the gods"; ("*Enti kita belaya ka tanah, niteh ka sungai, sigi gaga petara*"). And on several other occasions, I heard this same sanction evoked in the phrase: "The gods fashioned the valleys." ("*Gaga petara lebak*"). This basic principle accepted, the second is that the family whose previously farmed land is nearest to the disputed primary jungle, has prior rights of possession. Or, as the Iban put it: "Whosoever possesses the nearest *padi* stubble owns the land"; ("*Barang damping agi jerami, empu tanah*")[1]. It is by applying these two principles that disputes regarding primary jungle are usually settled.

49. When all of the virgin forest in the lower reaches of a stream has been exhausted, the group of *bilek* families concerned move on en masse towards its headwaters, to fell and farm the immediately adjacent tract of jungle; but once again each *bilek* family—operating as an independent unit—selects a separate spur as the scene of its activities. In this way, the basin of a stream is gradually worked out, so that when all of the virgin jungle has been felled, the whole area has come under the private ownership of a series of different *bilek* families. When this stage has been reached, everyone moves off to another stream to follow the same system, returning to the original site when the secondary jungle (*damun*) there is deemed to have grown to a sufficient size. This may be after a period of from ten to twenty or more years, depending on how much other land is available. Because of this system of gradual advance in groups, the various land-holdings of a *bilek* family are widely dispersed. Indeed, after a period of twenty years or so the territory of a long-house community, with its multiplicity of privately owned sections, resembles a gigantic chequer board. Each of these separate sections varies from about five to ten acres in extent, and seldom, if ever, does any one *bilek* family own more than a dozen acres in a single block. Instead, the individual farm sections of a *bilek* family are scattered piecemeal over the whole of the long-house territory. For example, in 1949, the *bilek* family of Pioh (one of the founders of the present Rumah Nyala), possessed a total of about 150 acres of secondary jungle, divided into some 24 different lots, scattered over an area of between four and five square miles, and situated on the banks of the Sungai Sut and in five of its minor tributaries.

50. The apportionment of virgin land is decided at a general palaver in which

[1]This maxim of customary law is from a judgement given by the late Pengulu Atan, when hearing a land dispute in the Sungai Sut.

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50. The apportionment of virgin land is decided at a general palaver in which all of the senior male members (*tuai bilek*) of the families of the long-house participate. But before this is held most *bilek* families have taken some measure of independent action. As soon as the sowing of one year's crop has been completed, a *bilek* family begins to plan the whereabouts of its farm of the following season, and general farming arrangements are premeditated by about two or three years. On my arrival at Rumah Nyala in 1949, for example, the people announced to me that they intended to take two more crops from the area in which they were then farming, and then return to secondary jungle in the main valley of the Sut; and this in fact is what they did. The process of selecting virgin forest for felling is not, however, highly organized, but rather unplanned and casual, with each *bilek* family acting largely on its own initiative. As already explained, it is usual for a small group of *bilek* families to operate in the same immediate area. After sufficient consultation to ensure that the plans of others are not being wilfully contravened, a *bilek* family declares its intention of farming a certain area, by setting up on it a sign, or *pesindang*, which consists of a notched stick and a cross-piece.

At the same time a small area surrounding this *pesindang* is cleared of undergrowth. Once this has been achieved, every opportunity is taken to acquaint all the other members of the community with what has been done. Where possible the matter is brought up on some semi-formal occasion—such as after a *bedara*, or minor ritual offering, when most of the senior members of the community are assembled on the *ruai* of the long-house. In this way the arrangement receives public recognition. Instances of conflict are rare. Often there is a certain amount of 'jockeying' for position, but once a *bilek* family has established its *pesindang* at the foot of a spur, there is little chance of this fait accompli being abrogated; and thereafter, tenure is governed by the principles already enunciated. Thus several months before a new year's farming begins, the intentions of most of the *bilek* families of the community are generally known.

51. There is however, one occasion in particular for the public discussion of questions of land tenure. This is following the *matak ka burong* ritual (which usually falls sometime in May), when the augur (*tuai burong*) of the community distributes to all *bilek* families desiring them, omen sticks (*kayu burong*), to be used during the initial stages of the new agricultural cycle. As soon as this important ritual has been concluded, a discussion of precise plans for the coming year breaks out. The arrangements of most families are firmly settled by this time, but there are commonly several who have not reached a final decision. In particular, this is the time when requests for the use of another family's secondary jungle (*damun*) are made. All secondary jungle is privately owned by different families, but in most communities there is a certain amount of 'borrowing' and inter-change of *damun*. Thus a family may, for various reasons, want to remain for another year in an area in which its own holdings of secondary jungle are not quite adequate to its needs; in these circumstances, the usual course is to request (*minta*) the temporary use of an adjoining strip of *damun* belonging to someone else. Usually such requests are granted, but there is no change of tenure, only the taking of one season's crop. Reciprocity is the principle governing these transactions; and occasionally a simple inter-change of *damun* is arranged by two *bilek* families. It does sometimes happen however, that rent (*tase damun*) is charged for the usufruct of secondary jungle. But this is a rare occurrence; during my two years in the Baleh, I did not encounter a single instance of rent being paid for *damun*, and according to Iban informants, it

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427 happens but seldom ("*Jarai, jarai bulih!*"). Furthermore, when rent is paid it is seldom more than one or two dollars. The Iban explanation of the custom is that it is primarily a device for putting pressure on someone who is reluctant to lend his land. When it is seen that a person is parsimonious (*rangka*) of his holdings, the *tase* payment is made simultaneously with a public request for the use of a patch of his *damun*, and in this way, say the Iban, he is shamed into agreement.

52. By and large, the Iban are a strait-handed people, and even between close kin there is sometimes considerable niggardliness over land. I recall an instance of this at the *matak ka burong* ritual held at Rumah Nyala, on 1st May, 1950. After the augur (*tuai burong*) had distributed his omen-sticks, a general discussion on farming arrangements for the coming year began. Among those present were Usah (48 years), and his mother's brother, Gasan (70 years); these two men were of different *bilek* families, but occupied neighbouring apartments in the main long-house. Usah said that he had come to ask Gasan for the use of a patch of secondary jungle (about 2 acres) adjoining the land which he (Usah) was intending to farm during the coming year. Gasan replied that on various occasions in the past, he had been liberal with his *damun*, but that many others in the long-house were not, and that he had now become disinclined to lend his land. There the matter was allowed to stand, no other member of the house making any attempt to intervene on behalf of Usah. It is significant to note that such requests between close kin are broached for the first time in public, and further that each *bilek* family possesses absolute powers over all land acquired by the felling of primary jungle. Thus, if a *bilek* family refuses to grant a request for the loan of secondary jungle, though persuasion is possible, no-one in the community can compel them to alter their decision. Nowhere in the Baleh did I come across farming land (*damun*) that had been bought or sold by Iban.

425 53. A *bilek* family's rights over secondary jungle are not held in unconditional perpetuity however, but only for as long as the family remains a member of the long-house community in whose territory its holdings lie. Thus, when a *bilek* family moves (*mindah*) to a new district and takes up permanent residence there, its old land rights lapse, and are gradually assumed by remaining kindred. In both 1949 and 1950, for example, Ubong (*bilek* No. 19) farmed secondary jungle which had belonged to the *bilek* family of a third cousin, who had left Rumah Nyala, and settled in the Sungai Mujong, about ten years previously. Ubong had not consulted his cousin in any way. In other words, such 'unowned' *damun* is treated as though it were primary jungle, and the first person to re-fell it establishes presumptive rights over its use in future years. In past years it frequently happened that an entire community moved on to occupy new country, and in this event the whole of their former territory was simply abandoned. For example the secondary jungle in the Katibas district, formerly owned by *bilek* families now living in the Baleh, is at present being farmed by subsequent settlers, who are either complete strangers, or only very remotely related to the original 'owners.' So rapid and chequered was the Iban advance in the Kapit District that down river communities often find themselves in possession of secondary jungle, the first fellers of which are not known. I also encountered a number of instances of this in the Sungai Sut. In 1944, a number of *bilek* families from Rumah Nyala moved into the headwaters of a tributary of the Sut, called Sungai Nyunggau. The Sungai Nyunggau belonged, in fact, to a neighbouring long-house, Rumah Ikau, but its people considered the land to be unpropitious. Some years before a leper had been secluded there (this is normal Iban practice),

1: Freeman B-5 (1949-1951)1955 OC6 Iban OC6

and he had disappeared without reason, no trace ever being found of his body. 425
Because of a fear that malevolent spirits (*antu*) had been responsible, the people of Rumah Ikau shunned the area; they were not willing to give up the Sungai Nyunggau entirely, but they did agree to let certain related *bilek* families of Rumah Nyala make temporary use of the land at its headwaters. This land was partly covered by virgin forest, and partly by secondary jungle of considerable age, called *pengerang*. No one knew to whom this secondary jungle had once belonged, but it was said that it dated from the time of the first Iban occupation of the Sut, at the beginning of the present century. Again, on their first arrival in the Baleh, the Iban found areas of secondary jungle which had resulted from the farming activities of the Lugats. These Lugats (who are closely allied to the Kajang peoples of the upper Rejang), had fled to the Anap, harried by Iban head-hunters. In such cases as these, secondary jungle is treated as though it were primary, and rights of ownership accrue to the first new fellers in the customary way. As we shall presently describe, the haphazard inroads of previous generations into the virgin forests of the Baleh, has resulted in very complex systems of usage.

54. Finally, it should be borne in mind that what has been said about land 311
tenure applies specifically to the Baleh region. From the historical introduction it will have been observed that the Baleh is essentially a pioneer region. In the past, all attempts to confine the Iban have failed; there has always been uninhabited virgin forest on a wide perimeter, and during the past hundred years, at least, the Iban have constantly and relentlessly encroached upon it. An indication of the scope of their advance may be derived from an examination of the life story of Pengulu Temenggong Koh. Koh was born, in about 1870, at Pulau Ensulit, in the headwaters of the Kanyau, a tributary of the Kapuas River, in what was then Dutch territory, here his family had retreated during the first Katibas expedition, of 1869. His boyhood was spent in the Katibas and in the Rejang, below and above Kapit. He is now (1950), farming virgin jungle on the western bank of the Baleh, some five miles above the mouth of the Putai (the former Government boundary), and distant about two hundred miles, by river, from the place of his birth. Over the whole of this distance there stretches a 'trail'—discontinuous and often erratic—of secondary jungle that has resulted from the yearly farm-clearings of Koh's *bilek* family.

55. The fact that virgin forest was in virtually unrestricted supply, resulted in little value being attached to secondary jungle. A *bilek* family was always ready to abandon the *damun* land it had acquired, to settle in a region of untouched *kampong*. Before the advancing Iban there lay thousands of square miles of deserted, or extremely sparsely populated, rain-forest. On their head-hunting forays Iban bands had penetrated into the remote headwaters of the Rejang, Kayan, Mahakam and Kapuas rivers, and the vast extent of the territories which extended before their tribe was well enough known.[1] In these circumstances, it

[1]In passing, it may be noted that Iban head-hunting raids on the Kayans, Kenyahs, Punans, Ukits, and other tribes of the Rejang basin, had more than mere ritual significance. The Iban, as we have seen, were invaders, and in a very real sense they were fighting for the possession of new territory. At first, there was resistance, and in the 1850's the Kayans were strong enough to launch severe attacks on Iban migrants in the Katibas. The great expedition of 1863 was a devastating retribution on all the tribes of the upper Rejang, and in subsequent years the Iban followed up this onslaught by countless fierce raids. Significantly, the Iban not only took heads. Whenever possible, they burnt down enemy long-houses, and cast all the iron implements they could find into a near-by river. In this way they hoped to discourage farming, and compel their enemies to withdraw. To a remarkable extent they

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

311 is understandable—if not excusable—that the Iban were prodigal of the primeval jungle. In Iban eyes, there was sufficient forest land to provide for untold future generations, and their whole policy was to exploit the stored-up fertility of virgin land by extracting from it two or three successive crops, and then to move on to fresh fields. It is also understandable that under these conditions, there was no very complex, or stringent system of land tenure. Land tenure becomes [423] a serious issue only when land is a relatively scarce, and consequently, a valued commodity. This situation has already been reached in many parts of Sarawak, and—as far as the Iban are concerned—notably in certain parts of the Second Division, where the virgin forest has for some years been completely exhausted. If Government succeeds in containing the Baleh Iban within their present limits, and if their population continues to increase, the whole land tenure situation will change. It therefore becomes important that Government should anticipate possible difficulties, by surveying and registering long-house territories, for only when this has been done will it be feasible to adjust the size of communities in relation to their available territories, and so attain a rational and stable cycle of cultivation.

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were successful. The Lugats were driven into the Anap, the Ukit into the Mahakam, and the Lesum, Badang and others, into the Apo Kayan or Baram. By the beginning of the present century, the Iban were unchallenged masters of the whole of the middle Rejang, and had not Government forcibly restrained them, they would have extended their influence even more widely.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

Part III

AGRICULTURE

Introduction

56. The subsistence economy of the Iban, and indeed, their whole way of life, is based upon the cultivation of hill rice, and it is to this subject which we now turn. Iban absorption in the growing of *padi* is complete, for each year every *bilek* family produces its own crop of rice; and it is upon skill in farming that the prosperity, and the very existence of an Iban family depends. The method they employ is that of shifting cultivation, and it is with this much condemned, and little understood system of agriculture that we shall be chiefly concerned. In the main my data are drawn from a detailed study of agricultural practice in one Iban community: Rumah Nyala, of the Sungai Sut; but this information is supported by observations made in many other parts of the Baleh, the middle Rejang, the Katibas, and the Ulu Batang Ai.

57. To what extent, it may be asked, are conditions in the Baleh typical of the Iban as a whole? An accurate answer to this question would require a very extensive survey, for the Iban are now established in all five Divisions of Sarawak. Such a survey has not yet been carried out, and in its absence, only a tentative estimate can be made. The Baleh is essentially a pioneer area, but in this respect it is not exceptional. At the beginning of the nineteenth century there were probably no Iban living north of the southern watershed of the Rejang basin, whereas to-day approximately 60% of the Iban population is settled northward of this line. The majority of these 'immigrants' occupy what may be regarded as pioneer areas. For our present purposes, a pioneer area may be defined as any hill region in which some of the Iban settlers are still felling and farming primary jungle (*kampong amat*). If this criterion be accepted, pioneer areas may be said to exist in the Kanowit, Kapit, Oya, Mukah, and Bintulu districts, and even in certain of the remote hill districts of the Second Division. In all of these regions, Iban farmers are following traditional methods of shifting cultivation, which are fundamentally the same as those current in the Baleh; and I estimate that the system described in this report is generally typical of the agricultural practice of at least from fifty to sixty per cent of the Iban population of Sarawak.

58. The Baleh, which falls within the 'undeveloped interior zone' of Sarawak, is an extremely hilly, and in places, a mountainous region. Ridges a few hundred feet in height, rise range upon range, to mountain massifs of three thousand feet and more. At the head of the Mujong, stand the Hose Mountains—a grotesquely shaped chain of limestone peaks, the one-time refuge of Iban rebels. Bukit Batu, of some 5,500 feet, is the highest of them. The rainfall is heavy (150 inches, and over, per annum), and the whole area is reticulated by an intricate system of fast flowing rivers and tributary streams. Almost everywhere the hills rise abruptly from the valleys, and river flats are rare. With a few negligible exceptions, there

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

133 is no swamp land suitable for the growing of wet *padi*, and in what follows therefore, we shall be dealing exclusively with the cultivation of dry, or hill *padi*. (Plate 1).

x243 771 59. From the outset it must be stressed that in studying Iban cultivation of hill *padi*, we are concerned with a larger problem than the description and analysis of agricultural techniques in a subsistence economy. To the Iban, the growing of *padi* is a ritual undertaking, and their whole system of agriculture is based on an elaborate fertility cult. It is in drawing attention to the significance of this cult that the anthropologist has a special contribution to make. The vast majority of the Iban people are still 'pagan,' but they are, nonetheless, an extremely religious people, and ritual pervades every aspect of their lives. The gulf which separates them from the empirical and scientific world of the West is vast; and in terms of human development it is to be measured in at least several thousands of years. If the Iban are to be understood this fundamental fact must be faced, and any policy which does not take it into account is predestined to end in frustration and failure.

x243 774 60. It is the fervent conviction of the Iban that their *padi* is a spirit, that it possess a soul, a personality of its own, and it is this belief that permeates the whole of their agricultural practice. In "The Golden Bough", Sir James Frazer describes Dayak belief in these well-known words: ". . . . the whole of the ritual . . . . is founded on the simple conception of the rice as animated by a soul like that which these people attribute to mankind. They explain the phenomena of reproduction, growth, decay and death in the rice on the same principles on which they explain the corresponding phenomena in human beings. They imagine that in the fibres of the plant, as in the body of a man, there is a certain vital element, which is so far independent of the plant that it may for a time be completely separated from it without fatal effects, though if its absence be prolonged beyond certain limits the plant will wither and die. This vital yet separable element is what, for the want of a better word, we must call the soul of a plant, just as a similar vital and separable element is commonly supposed to constitute the soul of man; and on this theory or myth of the plant-soul is built the whole worship of cereals, just as on the theory or myth of the human soul is built the whole worship of the dead—a towering superstructure reared on a slender and precarious foundation."[1]

x243 774 778 788 61. Every Iban *bilek* family possesses a strain of sacred rice called *padi pun*. Although all kinds of *padi* are animated by spirits, most important of all are the spirits which dwell in the *padi pun*, for these are 'the lords of all' (*raja amu padi magang*). Year by year each *bilek* family plants, in the middle of its farm, a small plot of *padi pun*, and this spot becomes a centre for the performance of manifold rites. It is through their *padi pun* that the Iban communicate with the rest of the *padi* spirits. A good example of this is the ritual known as *gawai memali umai*, which is performed when young *padi* is attacked by disease. A member of each *bilek* family (it is usual for the whole of a long-house community to join in the rites) goes to the farm, and with due ceremony digs up a single clump of *padi pun*. Back in the long-house, the clump of each participating *bilek* family is placed in a temporary shrine (*ranyai*), and for one whole night various gods [776 (chief of them is Pulang Gana, the god of fertility), and celestial spirit-mediums are invoked, so that, using their miraculous powers, they may medicine the

[1]Sir James Frazer, "The Golden Bough," Abridged Edition, 1932, p. 413.

See p. 146 a, Cat. 116.-Analysis

1: Freeman E-5 (1949-1951) 1955 OC6 Iban OC6

ailing *padi*. Early the next morning, the shrine is opened, and each clump taken back to the farm whence it came. As he carefully re-plants his precious *padi pun*, the Iban farmer utters these words:

"Oh sacred *padi*,
You the opulent, you the distinguished,
Our *padi* of highest rank;
Oh sacred *padi*,
Here, I am planting you:
Keep watch o'er your children,
Keep watch o'er your people,
Over the little ones, over the young ones.
Oh do not be laggard, do not be lazy,
Lest there be sickness, lest there be ailing;
You must visit your people, visit your children,
You who have been treated by Pulang Gana;
Oh do not neglect to give succour,
Oh do not tire, do not fail in your duty."

This *sampi* also gives some inkling of the attitudes of respect and deference which the Iban adopt towards their *padi*. It is their constant concern to avoid any action which might give offence to the *padi* spirits. Thus if ever any *padi* is spilt when being fetched from the storage bins, it is always most dutifully retrieved, and words of apology are whispered. But should *padi* fall beneath the long-house, where pigs roam and the mire lies thick, retrieval is often impossible and a special ritual, to make amends for the mishap, has to be performed. A piece of firewood (*lutik*)—which is intended to symbolize a *tangga*, or ladder—is cast beneath the house, and a stream of water—symbolizing the ladder's railing—is poured upon it from a gourd [illegible], waving a cock, to propitiate the occasion, the officiant calls to the fallen *padi* spirits:

"Oh beloved, let this, my brand, be your ladder—your route of return; and this water your ladder's railing.
Oh beloved, I did not wittingly cast you away!
Oh bless you, now I retrieve you: come back to room and to parlour, to the bark bin, your enfolding abode, your resting place, your sleeping place, your habitation, and home.
And may our *padi* be plenteous, our crops be abundant;
Oh come back suffering not headache or chill!"

Indeed, the *padi* spirits are looked upon as possessing a society of their own, and the Iban behave towards them, and address them just as though they were real persons. Thus we find an Iban farmer summoning the *padi* spirits at the end of the harvest in these words:

"Oh you *padi* spirits, harken now to my call!
Be you fishing, or hunting, or setting your traps;
I bid you return, I beckon, I summon you all:
All boys, all girls, all fathers, all mothers,
All grandsires, all grandams,
All kith and kin—of family and of tribe."

And when the *padi* spirits have been conducted back to the long-house—a trail of puffed rice (*rendai*) is scattered for them to tread—they are welcomed with ceremony such as the Iban reserve for their most distinguished guests.

62. A family's *padi pun* may never be sold or given away, and to it there are

62. A family's *padi pun* may never be sold or given away, and to it there are attached a series of ritual prohibitions, or *pemali*. In many cases, for example, it is taboo to enter a farm after having previously (i.e. on the same day) touched or eaten pork. To break such a *pemali* is to offend the *padi* spirits, and run the risk of their being frightened away; offenders are heavily penalized, the fine exacted from them laid at the foot of the growing *padi*, a cock sacrificed in expiation, and prayers of atonement uttered. These *pemali* apply to all the members of a long-house and to strangers as well; ignorance of their nature affords no excuse, and, although transgression may have been entirely inadvertent, the penalties still operate. Every *bilek* family has its own particular set of prohibitions; often they may be ten or more in number, and there is wide variation from family to family. In carrying out my field research it was always necessary to ascertain well in advance the *pemali* of any farm which I proposed visiting, and then to modify my diet and behaviour in the manner required.

63. I was made aware of the extraordinary strength of Iban belief in their *padi* cult a few months after my arrival in the Sut. I had brought with me the equipment necessary to carry out a simple plane-table survey, so that accurate measurements of farm land could be obtained. In the course of a discussion with a specially arranged meeting of senior members of the long-house, I put forward my research proposals. In general they were acceded to with alacrity (and throughout the whole of my period of research I was accorded remarkable co-operation and helpfulness), but to the suggestion that I should survey farm land, there was immediate and hostile opposition. It was said that once before a survey party had visited the Baleh, and that in ensuing years, there had been disastrously bad harvests; the *padi* spirits, disturbed by the brusque ways of the surveyors, had taken offence and fled. From the emotion which accompanied its expression, it was clear that this was a fervently held opinion, but accurate survey was an important part of my work and I had gone to considerable trouble in bringing equipment all the way from England; I at once set about doing all I could to combat the idea that it was harmful. I employed arguments of many kinds. My research, I said, was aimed at helping the Iban, at finding ways to improve their crops; in other parts of Sarawak most bountiful harvests had followed extensive surveying; they were mistaken in thinking that the *padi* spirits, who belonged to the Iban, could take offence at the actions of a European, whose *adat* was entirely different, but I would be glad to perform sacrificial rites before embarking on my work, and I would observe all other *pemali* with scrupulous care. But my audience was adamant. By this time the discussion had been going on for about two hours, and realizing that further attempts at persuasion would be futile, I resorted to sterner arguments. My research, I reiterated, was intended to help the Iban, they must trust the Government; Government knew best in saying that their land should be surveyed. But this slight threat of coercion provoked a fierce reaction. His eyes flaming and his voice suffused with emotion, Nyala—the *tuai rumah*—averred that the Government could shoot them and burn down their long-houses, but they would not submit to having their *padi* farms surveyed. The others present sprang to his support, and for several minutes there was a babble of disturbed voices. If I were not to jeopardize the whole of my research, retreat was imperative; I was compelled to disavow my plans, and apologize for my effrontery.[1]

[1] It is interesting to note that Izikowitz encountered similar difficulties when doing field research among the Lamet (of French Indo-China), who practice shifting cultivation, and have a *padi* cult closely resembling that of the Iban. He describes how he attempted to map farm land, but the Lamet were very suspicious, and when he was setting up a pole to use as a measuring point in triangulation, there were loud protests that harm would result to "the

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

64. On subsequent occasions I tried, by more devious methods, to persuade individual Iban to let me survey their farms—but without success. I discovered however, that it was the surveyor's chain to which most objection was taken. By using a prismatic compass and a measuring line of fine twine, I did manage to make hurried and surreptitious surveys of several farms (*umai*), but finding myself under suspicion, I was obliged to abandon even this. Finally I resorted to pacing—with as nonchalant an air as I could command—and sights taken from the shelter of friendly stumps. Despite this ban on surveying, I was permitted to visit most of the farms of Rumah Nyala whenever I chose (provided, of course, that I obeyed the various *pemali*), and when it was found that I was seriously interested in Iban methods, I was invited to many more *padi* rituals than I had time to attend. It is when the *padi* is being sown, and during the early stages of growth that ritual prohibitions are at their most stringent, and during these periods two *bilek* families would not allow me to set foot on their farms; but in these cases, the prohibition (*pemali ngendik tegalan*) also applied to most of the other members of the long-house. Later in the year these restrictions were relaxed however, so that in course of time I was able to make repeated and detailed inspections of all farms. As will be seen later, repeated visits were always necessary, first to plot the area of jungle felled, and then to mark in the actual extent of the *padi* crop. In the course of successive visits I was able to compile a series of sketch maps. In almost all cases these maps were based on a series of measurements—by pacing—of the major dimensions of a farm, and then, the sketching in of its outline and other principal features, from several different vantage points (i.e. adjacent spurs and ridges). This method was aided by the fact that the boundaries of Iban farm plots are always very plainly demarcated against the surrounding jungle from which they have been cleared. In only two instances was it possible to make more elaborate surveys, and both were clandestine operations, undertaken soon after reaping had been completed. In general then, my data on farm acreages are based on sketch maps and careful estimates, not (as I had planned) on detailed plane-table surveys. In passing it may be noted that the survey of Iban hill farms is no easy task. Very often they are situated on extremely steep slopes (i.e. 35°—40°), broken by confined and precipitous gullies and cluttered with massive accumulations of fallen timber.

65. One of my leading reasons for selecting Rumah Nyala as the centre of my research was that all of its farms could be reached directly, and on foot, from the main long-house. For the Baleh region this is an unusual state of affairs. As already explained, each *bilek* family operates as an independent unit, and commonly the farms of a long-house community are scattered up and down the banks, and tucked away in the side streams, of a section of river from three to four miles in length. More often than not the river is broken by rapids and shoals which inhibit travel unless a well-manned canoe be available, and this is very difficult to come by when the Iban are living on their farms and pre-occupied with their *padi*. The farms of Rumah Koh, in the Ulu Baleh, for example, are strung out over several miles of river, and some of them are distant five or more

owners as well as the soul of the rice." Izikowitz continued his survey, using a lance instead of a pole—the spirits (so it was said) being afraid of the point of the lance; but within a few days the owner of the land did fall ill, and Izikowitz was absolutely forbidden to continue with his mapping. (Izikowitz, "Lamet," 1951, p. 282).

A Government surveyor, by exerting sufficient pressure, might possibly get his way, but an anthropologist could not afford to do this, for the success of his work depends on the maintenance of goodwill among the people he is living with and studying.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

X 243 121 hours (depending on the state of the water) from the main long-house. At Rumah Tungku, in the Sungai Tiau (a long-house of 50 *bilek* families), the farms were dispersed over an area of about 15 square miles, and the majority of them could only be reached by canoe. Similar conditions prevailed at most of the other long-houses which I visited, and had any of them been selected as a site for research, it would have been extremely difficult to have obtained a comprehensive view of the farming activities of the whole community. Rumah Nyala presented me with the great advantage of being able to move about at will, and the most distant of the farms could be reached in a tramp of about three hours. Another important consideration was that at Rumah Nyala a wide variety of different land was being cultivated, so that I was able to observe the felling and farming of primary, and many different types of secondary jungle, and to make valuable comparisons.

X 243 128 182 66. Iban agriculture, as may have become apparent, is an extremely complex subject. In particular, it is complicated by elaborate ritual acts and concepts which are all elements of cardinal importance. Throughout the agricultural cycle ritual and labour are inextricably interwoven. Every stage in the actual cultivation of the *padi* is accompanied by rites which, in Iban eyes, are vital to the success of a crop. This continuum is a formidable labyrinth of diverse elements, and its complexity poses difficult problems in description and presentation. For the purposes of this report, I propose to begin with a discussion of settlement patterns, and then pass on to the *padi* cycle, and the techniques employed by Iban cultivators. Other sections will be devoted to the economics of agriculture, and methods of land usage. In the course of the discussion, frequent reference will be made to the magico-religious beliefs and practices of the Iban, but no more than passing reference. On the *padi* cult of the Iban I was able to collect a great mass of information, for it is still a living reality. I plan to deal fully with this most important and fascinating subject in a separate monograph, which will stand as a supplement to this present report. It must constantly be borne in mind however, that all these elements are integral parts of a single process; indeed, only when the inter-dependence of economics, social organization and ritual are understood can there be any genuine appreciation of the nature of Iban agricultural practice.

Shifting Cultivation and Settlement Patterns

X 243 67. Shifting cultivation may be briefly defined as an economy of which the main characteristics are "rotation of fields rather than crops; clearing by means of fire; absence of draft animals and of manuring; use of human labour only; employment of the dibble stick . . . . ; short periods of soil occupancy alternating with long fallow periods."[1]

X 243 311 68. The practice of shifting cultivation means that each family unit requires for its subsistence an extensive area of land. When working in virgin jungle it is usual for the Iban to cultivate half or more of a farm for two years in succession, but with rare exceptions a proportion of new forest is felled each year. In secondary jungle, on the other hand, it is normal for the whole of the farmed area to be abandoned after one crop has been taken. Iban methods of land usage, as will be explained presently, are complex, but when land is finally allowed to revert to secondary growth, it is left for as long as possible, and this is often for a

[1] K. J. Pelzer, "Pioneer Settlement in the Asiatic Tropics: Studies in Land Utilization and Agricultural Colonization in Southeastern Asia," New York, 1945, p. 17. ("Other terms for shifting cultivation are field-forest economy and field-forest rotation").

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

period of fifteen years or more. In the course of time therefore, the various holdings of each *bilek* family become dispersed over a wide area. This dispersal creates special problems.

69. Growing hill rice in jungle clearings is an undertaking fraught with many difficulties. One of the chief of these is the threat of depredation by marauding animals. In the forests live, and in large numbers, wild pigs, deer, and monkeys, all of which—given the chance—will invade a farm and take their fill of the growing *padi*. It becomes imperative therefore that a farm be vigilantly guarded. To achieve this the Iban live as near as they can to their farms. There are also other advantages. Much time and effort are saved if the farm be near at hand. During the course of the agricultural year a man visits his farm from 150 to 200 or more times. And the women, on whom the heavy burden of weeding and reaping falls, may be even more frequent visitors. By having a strategically placed base, a family can, in the course of a year, save themselves many hundreds of hours of arduous walking over difficult and hilly country. A subsidiary house, built in the same valley as the family's farm, brings within easy reach a hill-side that may be two to three hours' journey from the main long-house. This ease of access becomes an especial boon, when, after reaping, the *padi* has to be carried down from the hill tops—in huge baskets (*lanji*) slung from the shoulders—to be threshed, winnowed and stored. Again, a house near to relatively unfrequented jungle presents far better opportunities than does the main long-house for that foraging for wild fruits, fungi, and other edible plants, at which Iban women excel. There are likewise better opportunities for hunting and fishing. And at the same time, the precincts of the long-house are given a chance to recuperate.

The Dampa System

70. All of these factors give rise to what we may call *the dampa system*. When a new settlement is founded, the forest in its immediate vicinity is felled first, and as long as farms lie within a radius of about half a mile to a mile (or slightly further, if they can be reached by canoe), activities are conducted from the main long-house. After a few years however, as more distant land is brought into cultivation, accessibility becomes a problem, and when this stage is reached the community breaks up into a number of distinct groups—each group farming in a different part of the long-house territory. Typically, the whole community moves to the same general quarter of the territory, where each group takes over the pioneering of a small (i.e. unnavigable) tributary stream. These arrangements are decided upon at a series of conferences (*baum*) in which all the *bilek* families of the community participate. A proposal to farm new land is first mooted by several closely related *bilek* families (i.e. containing siblings, first or second cousins), and usually such a group will have a leader who, although he is never formally appointed, plays a major part in the inauguration and planning of the venture. Ideally he is a man skilled in the taking of auguries. Other families develop parallel plans, and gradually several groups are formed. In size these groups vary from two to ten or more different *bilek* families, depending largely on the extent of the area in which they propose to farm.

71. As soon as the composition of a group has been settled it then operates as a separate unit, its component *bilek* families deciding amongst themselves the way in which the tract of jungle they have chosen is to be parcelled out. But first of all they must decide upon a site for their farm house, or *dampa*. The spot selected is always centrally situated in the valley where cultivation is to occur

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

(Plate 4); what is wanted is a level terrace as near as possible to a bathing pool, and a good supply of drinking water. If the valley be confined, and flat land scarce, then two or more *dampa* will be constructed in the same locality. A *dampa* is a structure built on exactly the same pattern as an ordinary long-house, though always on a somewhat smaller scale. Just as in a long-house (*rumah panjai*), each family possesses an apartment of its own, consisting of *bilek*, *sadau*, *ruai*, and *tanju*. Commonly the walls of a *dampa* are of bark, and its flooring of split bamboo, but it is nonetheless, a substantial and well-built house, designed to serve as a main residence for some years. It is usual, for example, to find most *dampa* properly roofed with ironwood shingles—the only form of lasting protection against the torrential rains of central Borneo; and they are comfortably furnished with all of the everday requirements of the Iban. Essential equipment is carried from the main long-house—and the *dampa* becomes the domestic headquarters of the family. In its loft (*sadau*) the *padi* stocks of the *bilek* (which may amount to 100 bushels or more) are stored, and beneath the house, and in its precincts, roam the domestic fowls and pigs of which each family possesses at least a few. Many *dampa* indeed, have the appearance of being permanent habitations. Few of them, however, are occupied for more than five or six years in succession, for as soon as the slopes of the surrounding valleys have all been cultivated, it becomes imperative to move on to fresh jungle. When this stage is reached, the Iban must perforce change their place of abode, though they usually do so with considerable reluctance, the transporting of all the manifold appurtenances of a *bilek* family over several miles of hilly country being no light undertaking. Sometimes it is possible to travel by canoe, but more often than not, everything must be laboriously carried on foot. The old *dampa* is dismantled, and the more valuable parts of it (e.g. ironwood shingles and floor laths, etc.), taken to the new site where a new house is erected. The whole operation, the clearing of the site, building the apartment, and transporting the *padi* stocks and domestic paraphenalia, commonly takes several months; and the time chosen is always the period between the completion of harvest and the beginning of the next agricultural cycle, during the months of April, May, June and July. When the move has been achieved, the new *dampa* then becomes a base for farming the hills and valleys that encircle it, and serves as a main homestead during the four or five ensuing years—or until such time as all the jungle within easy reach has been felled and farmed.

72. In this intermittent way, *dampa* follows *dampa*, until a return is made to the main long-house, there to farm again the secondary jungle in its immediate precincts, and so initiate a further grand cycle of cultivation. The exact nature of this grand cycle of cultivation varies from long-house to long-house, according to the number of *bilek* families in the community and the extent of the territory available to them; i.e. the 'population-land balance.'[1] The range of variation is, in fact, considerable, but many communities in the Baleh region are in a position to follow grand cycles of cultivation of from 15 to 25 years' duration. If one assumes a cycle of say 20 years, it is typical that not more than about a quarter of this period is spent actually farming from the main long-house. The remainder of the period is taken up in operating from a succession of three or four different *dampa*, spaced at strategic points within the long-house territory.

73. When the *dampa* system is being practised, it is usual nonetheless, for family members to make fairly regular visits to the long-house to inspect property

[1] W. Allan, "Studies in African Land Usage in Northern Rhodesia," Oxford, 1949, p. 74.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

stored there, and to see that everything is in order;[1] and after reaping is completed a general return (extending over several weeks), is customary so that all *bilek* families may join in the performance of harvest and other rites. During crucial stages of the agricultural cycle however (i.e. felling, sowing, weeding and reaping), the main long-house is almost invariably deserted, members of all *bilek* families living exclusively in their *dampa*. On 1st March, 1949, for example, when I arrived unannounced at the long-house of Temenggong Koh, in the Ulu Baleh, I found all of its forty apartments untenanted; logs of wood were propped against closed doors, *padi* mortars (*lesong*) were upturned and the planks of the *ruai*, bare of mats, and thick with dust—the whole house had the forlorn and derelict air of an unfrequented building. As I discovered, when I travelled on upriver, everyone was preoccupied with the harvest, and the various *bilek* families of the community were living in their *dampa*, distant, in some cases, about seven miles from the main long-house. The encountering of deserted long-houses is a common experience in the Baleh region—but only if one travels unannounced. Normally, the movements of Government officers are made known well in advance, and in good time there is a general return to the main long-house—for it is believed that Government is opposed to the *dampa* system.[2] In this way, the fiction of the permanently occupied long-house is successfully perpetuated; but within an hour or so of the officer's departure, the people are making their way back to their scattered *dampa*.

74. Such surveys as I was able to carry out suggest that the *dampa* system is widely prevalent throughout the Baleh region (and, indeed, in all other similar pioneer areas), all but the smallest of long-houses finding it an imperative expedient. If subsistence is to be maintained and adequate crops be achieved it is essential that those managing a farm should live as close to it as possible. Granted the method of shifting cultivation, recourse to the *dampa* system is inevitable as soon as a community increases beyond about eight *bilek* families, and farms become removed by more than a mile or two from the original centre of cultivation. The various *dampa* into which the *bilek* families of a community are grouped, at any given time, may be thought of then, as satellite houses, in relation to the main long-house—temporary habitations brought into being by the exigencies of shifting cultivation.

The Dampa System at Rumah Nyala

75. To illustrate the working of the *dampa* system in further detail, let us now consider the conditions existing at Rumah Nyala, during the two farming seasons 1949-50 and 1950-51. Rumah Nyala, it will be remembered, is a community of 25 *bilek* families, and the main long-house is situated on the true right bank of the Sungai Sut, some four or five miles from the Sut-Baleh confluence.

[1]Some communities in the Baleh possess rubber plantations, and these plantations (held in private ownership by individual *bilek* families) are generally close to the main long-house. Where rubber plantations do exist, it is usual to find that one or more of the men of each *bilek* family spends as much time as possible living in the main long-house and tapping rubber, while the other members of the family remain in the *dampa* and attend to the growing of *padi*.

[2]Government regulations prescribe that no house shall have fewer than 10 apartments, and strictly the *dampa* system is a contravention of this requirement. Sea Dayak Fines, Third Division, 1940; Part V, Section 10e, states: "A Dayak, who does not within a reasonable time move all his *padi* from his farming hut to his house after harvest, shall be considered to have moved within the meaning of this section." Part V, Section 10f, requires that "The person who erects ('*dulu ngentak*') the first post of a new house of less than 10 doors without special permission shall be fined $25 all to Government, and the house shall be dismantled by the builders."

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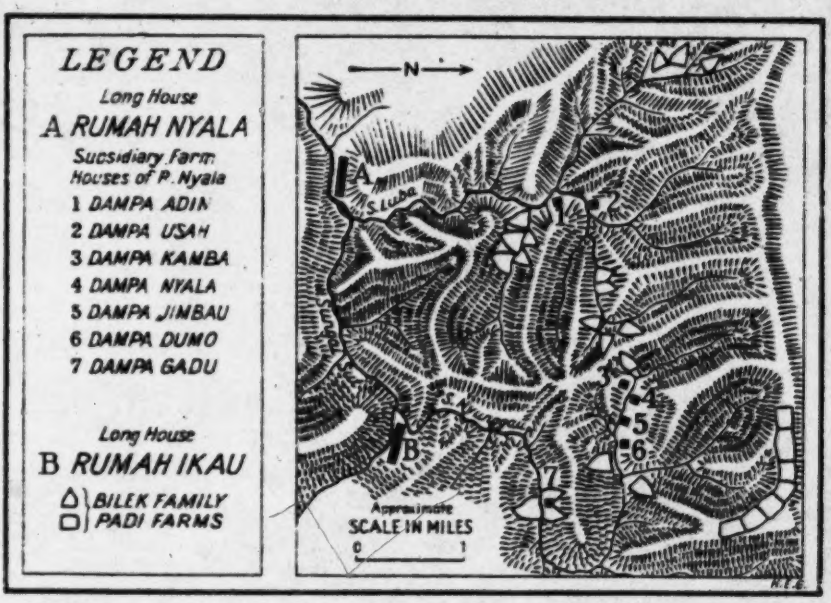
361 133 The Sut, which drains several hundred square miles of hilly country is navigable for over 40 miles by native canoe, and normally there was sufficient depth of water for me to be able to reach Rumah Nyala in a 36ft. *prau*, powered by a 22 h.p. out-board engine. The Sungai Sut was first occupied by the Iban in the 1890's, and for the most part the hills bordering its course are covered with secondary jungle; virgin forest being found only in the headwaters of its tributary streams. When I arrived at Rumah Nyala in 1949, I found that all 25 *bilek* families were following the *dampa* system, the whole community being concentrated in two minor tributaries of the Sut: the Sungai Luba and the Sungai Nyunggau. Neither of these streams was navigable by canoe; instead there were rough foot tracks along their courses and ridges. As will be seen from the accompanying sketch map, the two streams had a common watershed. The Sungai Luba fell within the territory proper of Rumah Nyala, while the Sungai Nyunggau (as already recounted in Para. 53), though coming under the jurisdiction of a neighbouring community, Rumah Ikau, had been made freely available to certain *bilek* families of Rumah Nyala, on a temporary basis. The people of Rumah Nyala had been farming in these two streams since 1944, and from the outset they had constructed and lived in locally situated *dampa*.



Sketch Map 3. The subsidiary farm houses (*dampa*) and *bilek* family *padi* farms (*umai*) of Rumah Nyala, Sungai Sut, 1949-50
(See *Sketch Map* 1 for approximate location)

361 103 76. In the sketch map (Sketch Map 3) the locations of the various *dampa* of Rumah Nyala for the season 1949-50 are shown. It will be seen that there were two houses in the Sungai Luba, and five in the Sungai Nyunggau. For convenience, each of these seven *dampa* has been named after one of its senior and founding members: but it must be stressed that this system of naming is very

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largely arbitrary, for no *dampa* has a formally appointed head-man. In conversation, etc., the Iban identify a *dampa* by mentioning the name of any one of its members; as, for example, in the phrase: *dampa sida Kamba*, meaning the *dampa* of those *bilek* families living together with Kamba. There is no fixed rule however. *Dampa Adin* (Plate 3), was distant only about 40 minutes walk from the main long-house—a rough track crossing and re-crossing the tortuous course of the Sungai Luba. It is unlikely that a *dampa* would ever be constructed nearer than this to the main long-house, nor is it likely, even in this case, that a *dampa* would have been built, had not the families concerned decided, in advance, to farm the basin of the Sungai Luba for some six years in succession. Over this period of time, the fact that about 80 minutes is saved on each visit to the farm, becomes a most important consideration. Another four *dampa*, grouped within a few hundred yards of one another in the headwaters of the Sungai Nyunggau, were distant about one and a half hours from the main long-house, and were reached by crossing a saddle, about 400 ft. high, from the head of the Luba. *Dampa Along* (Plate 6), on the other hand, was approached by paddling up the Sut, and then walking up the Nyunggau from its mouth—again a journey of about one and a half hours. To travel from *Dampa Adin* to *Dampa Gadu* (passing all of the homesteads into which the community was divided) took about 100 minutes, and although inter-visiting was fairly common, some members of the long-house did not see one another for many weeks on end.

77. In Table 1, the various *bilek* families occupying the seven different *dampa* of Rumah Nyala during the season 1949-50, are laid out in detail. In each instance, the spatial alignment of the constituent *bilek* families is shown; the name given being that of the *pun bilek*, and the number referring to the position of the *bilek* family's apartment in the main long-house. (The *bilek* apartments in the main long-house have been numbered consecutively, beginning at the down-river end of the house.)

Table 1: Composition of Dampa Groups

I. *Sungai Luba:*

(a) *Dampa Adin*		(b) *Dampa Usah*	
bilek No.	*pun bilek*	*bilek No.*	*pun bilek*
14a	Nyuai	1a	Usah
6a	Adin	13	Majau
4	Sating		
22	Anjing		
15	Una		
12	Bunsia		
6	Limau		
14	Legan		
19	Ubong		

II. *Sungai Nyunggau:*

(c) *Dampa Kamba*		(d) *Dampa Jimbau*	
bilek No.	*pun bilek*	*bilek No.*	*pun bilek*
21	Kubu	3	Sube
18	Unyang		
17	Ja		
5	Kamba	(e) *Dampa Dumo*	
		2	Dumo

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II. *Sungai Nyunggau—continued:*

(f) *Dampa Nyala*		(g) *Dampa Gadu*	
23	Limau	9	Babat
16	Jala	7	Gadu
1	Bangi	8	Gayar
10	Sumbok		
20	Sulan		
11	Rimbor		

78. During the 1950-51 season the position was somewhat different, the following six changes (i.e. 23% of all *bilek* families) having occurred:[1]

(*a*) *bilek* families No. 1a, No. 2 and No. 16, joined Dampa Adin;

(*b*) *bilek* family No. 17 moved to the main long-house, and its place in Dampa Kamba was taken by *bilek* family No. 3 (Jimbau being the second cousin of Kamba);

(*c*) *bilek* family No. 13, moved from the Luba to the Nyunggau, to join Dampa Gadu (Lindan being the adopted daughter of Gayar).

As these changes suggest, *bilek* families operate as autonomous units, and are entitled to join any *dampa* in the precincts of which they possess rights over land.

79. Table 2 summarizes the position for the two seasons, 1949-50 and 1950-51 —the community being divided into seven different *dampa* groups during the first season, and into five, during the second.

Table 2: Dampa Groups of Rumah Nyala

No. of apartments in dampa	*Incidence*	
	During the 1949–50 season	*During the 1950–51 season*
1	2	1
2	1	—
3	1	—
4	1	2
5	—	1
6	1	—
9	1	—
12	—	1
Total number of dampa:	7	5

The Kinship Basis of Dampa Groups

80. In an earlier section of this report attention was drawn to the fact that *bilek* families—in any long-house community—are linked by an intricate web of relationships based on cognatic kinship. We have now seen that the exigencies of the Iban system of shifting cultivation result in the temporary sub-division of the long-house community into a series of subsidiary groups, each living in a separate

[1]It will be noted that one of the *bilek* families of Rumah Nyala divided, for the purposes of farming, into two work-groups—each group having its own farm. This was the family occupying apartment No. 1, in the main long-house, of which Bangi was the *pun bilek*. Usah, his wife, and son (No. 1a) farmed in the Sungai Luba; while Bangi, Rebut, his wife and children (No. 1), worked in the Sungai Nyunggau. These two work-groups constituted nonetheless, a single *bilek* family, for the crops they obtained were put into a common pool, which, like all other *bilek* possessions, was held in common ownership.

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dampa. A further question at once arises: what are the principles which govern the formation of these subsidiary *dampa* groups?

81. In general, they are the same principles as those which determine the composition of the long-house community itself: any cognatic relationship traced from any member (natal, adopted or affinal) of a *bilek* family is sufficient to ensure entry to any *dampa* group. But this principle operates, of course, only when virgin forest is being worked; in an area of secondary jungle all land is owned, and this fact pre-limits the composition of *dampa* groups; i.e. they are a re-association of the *bilek* families responsible for the felling of the original forest. Furthermore, it does occasionally happen that entirely unrelated *bilek* families will combine in establishing a *dampa*. In these cases the basis of association is friendship arising from prolonged residence in the same long-house community. One such instance occurred at Rumah Nyala (e.g. Usah, No. 1a and Majau, No. 13). In the great majority of cases, however, kinship is the articulating principle, but it is essential to realize that bilateral kinship presents *bilek* families with a very wide choice. Any tie, from siblingship to remote cousinship, may be selected and made the vinculum of an association. A detailed analysis of the kinship composition of the *dampa* groups of Rumah Nyala, shows considerable variation. There are eight instances of siblings, who are senior members of their respective *bilek* families, living together in a common *dampa*; but, six other pairs of senior siblings are living in different homesteads. Again, in only two instances did *bilek* families occupying adjacent apartments in the main long-house (e.g. No. 7 and No. 8; No. 17 and No. 18), live side by side in the same *dampa*. The *dampa* system thus offers opportunities for innovation and change which are congenial to the Iban temperament, and entirely consistent with the tenets of Iban social organization. What does emerge very clearly is the salient and vital principle that every *bilek* family is independent, possessing the right to accentuate, for its own purposes, any tie of bilateral kinship within the total community to which it belongs.

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The Rôle of the Bilek Family in Padi Cultivation

82. We have now seen that each *bilek* family lives as near as it can to the land which it is farming, combining, where possible, with other families that happen to be working in the same area, to form a *dampa* group. From life in these small residential groups the Iban derive many psychological satisfactions, and there is always the reassurance that in time of crisis—birth, sickness and death—there are kith and kin close at hand to offer sympathy and help. But in economic organization the *dampa* group is of minor importance, for among the Iban there is an absence, in agricultural affairs, of any kind of communal ownership, production or consumption. At certain stages in the farming cycle, *bilek* families (though not always from the same *dampa*) do form small co-operative work-groups, but here the principle is one of labour-exchange, governed by strict reciprocity. Never does it happen that two or more *bilek* families work a common tract of land on a crop-sharing basis. Instead, each *bilek* family manages its own farm as a completely independent unit, and has absolute rights of ownership over whatever crops it succeeds in producing. This fact of the autonomy of the *bilek* family, we may single out as the fundamental feature of Iban economic organization. Year by year, each *bilek* family brings into cultivation a tract of land (in most cases it is about four or five acres in extent), from which to provide for its subsistence, and, if conditions be propitious, to produce a surplus for the purchase

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of valuables, such as brass gongs (*tawak*) and Chinese jars (*tajau*). To achieve this is no simple task. What then are the main operations to be performed, the chief problems to be faced in the cultivation of hill *padi*? Let us begin with an outline of the principal stages of the agricultural cycle.

THE TECHNIQUES OF IBAN HILL PADI CULTIVATION

Planting by the Stars

83. The commencement of the Iban agricultural year is signalized by the dawn rising of the Pleiades. For the purposes of *padi* cultivation, three main constellations are recognized:

(*a*) *bintang banyak:* Pleiades;
(*b*) *bintang tiga:* Orion;
(*c*) *bintang tangkong peredah:* Sirius.

It is to the Pleiades however, that particular importance is attached. The Iban account for their stellar lore by a myth which tells how in ancient times a man named Raja Tindit became the husband of the youngest of the Pleiades, and learnt from her the secret of when to plant their life-giving *padi*. Briefly, the main rules are these:

(*a*) When the Pleiades first appear above the horizon (*tisi langit*), at dawn (*dini ari*), this is the time for the commencement of the *manggol* rites (i.e. the taking of omens and the first clearing of the undergrowth at the ritual centre of the farm). At present, this event falls on approximately the first day of June.

(*b*) When the Pleiades appear at the zenith (*prabong langit*), shortly before dawn (*dini ari*), this is the season for dibbling (*tugal*) to begin, and the first sowing of the *padi*; but any time between then and the arrival of Orion at the zenith, at dawn, is opportune. At present, the Pleiades reach the zenith on approximately 31st August, and Orion on 26th September.

(*c*) In the event of wet weather preventing the firing of the farms at the proper time (i.e. in August), planting may go on after the dates given above, but (so it is said), *padi* sown after Sirius has passed the zenith (*nyau ari prabong langit*) will not mature properly (*enda nyadi padi*). At present, Sirius reaches a point 5 degrees past the zenith on about 19th October.[1]

84. The Iban still attach great importance to their stellar lore. Tungku, a *tuai rumah* of the Mujong headwaters, put it in these words: "If there were no stars we Iban would be lost, not knowing when to plant; we live by the stars." ("*Enti nadai bintang tesat ati kami Iban, enda nemu maia nugal; kami idup ari bintang.*") It must not be thought however that there is any dogma that rituals, etc. should be held on the exact dates given. The Iban are a pre-literate people without a calendar, and the movements of the Pleiades, Orion and Sirius are taken as no more than general indications of the time when the major operations of felling and planting should be embarked upon. In 1949, at Rumah Nyala, it

[1] Iban stellar lore is probably of great antiquity. This poses an interesting question. In such primitive systems is any allowance made for alterations arising from the procession of the equinoxes? This cycle takes 26,000 years, therefore about 2,000 odd years ago, the stars were in the above-mentioned positions one month earlier; while 13,000 years ago they were there six months earlier.

(For assistance in calculating dates, etc., I am grateful to Miss M. Glyn-Jones, of the Department of Geography, Cambridge University).

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did happen that the first *manggol* rites marking the formal inauguration of the agricultural year were performed on Wednesday, 1st June, but because of abnormally wet weather, the firing of the farms was seriously delayed, and sowing did not begin until 18th September.

The Rites of Manggol

85. The rites of *manggol* which mark the inauguration of the agricultural year are elaborate. They begin with a general ceremony, conducted by the *tuai burong*, or augur of the community, which all *bilek* families are at liberty to attend. Thereafter, however, each *bilek* family performs its own rites in the manner which its senior members think fit. The main purposes of the *manggol* rites are: (*a*) the procuring of auspicious bird omens; (*b*) the propitiation of the spirits of the earth and the jungle; and (*c*) the inauguration of the major operation of felling, by the use of ritual whet-stones (*batu manggol*). The whole process takes from about twenty days to a month. These intricate rituals will be discussed in detail in my study of the Iban *padi* cult; all that need concern us here is the fact that the *manggol* rites mark the beginning of the first stage in the labour cycle—the clearing of the undergrowth.

Clearing the Undergrowth

86. The clearing (*tebas*; v.f. *nebas*) of the undergrowth is a clearly defined operation, and not until it has been completed, does the felling proper (*tebang*, v.f. *nebang*) begin. The process is a gradual one, for it is geared to the performance of a series of rituals. On the first day, an area of not more than one or two square poles is cleared, and only small saplings slashed. On ensuing occasions longer and longer periods are devoted to *nebas*, and not only saplings, ferns and creepers and the like, but young trees (i.e. up to about 3–4 inches in diameter) are cut down; until finally, every kind of growth which can be tackled with a bush-knife, or *duku*, has been cleared away. This use of the bush-knife as a tool is the distinguishing feature of the *nebas* stage. Again, because the bush-knife is so easy to handle, both women and boys are able to join in the work.

Felling the Jungle

87. When the preliminary clearing of undergrowth has been completed, the men move on to the much more arduous and difficult task of tree felling. If the farm be in virgin jungle (*kampong*), the smaller trees are dealt with first, and the giants, which may be 150–200 feet in height, and 15 feet and more in girth, are left till last. Felling such trees, often on steep and broken hill-sides, is an undertaking which calls for strength, dexterity, agility and nerve. But these are qualities which the Iban cherish, and which every young man of ambition hopes to develop. Tree felling, particularly in virgin jungle, is the man's task par excellence; an occasion for the demonstration of skill and daring, an opportunity for a young man to establish himself among his peers. In every community there are men of outstanding prowess, who excel in tackling the more difficult giants which are always left till last, and have the special name of *galau*. Felling these *galau* is a pastime not without hazard, for it can happen that one of them, on falling, will recoil—suddenly and without warning—and crush the axeman before he has had time to escape. The adventures and misadventures of *nebang* are a favourite topic of Iban men, and each year as the new season approaches old stories are told anew, and the tasks that lie ahead relished in advance. Sometimes, indeed, a man will lay claim to a tree which for some reason or other has

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taken his fancy, or which, perhaps, he views as a challenge to his skill. In Iban ritual invocations (*timang*), the prowess of their gods and culture heroes in felling immense and primordial trees is a recurrent theme. Tree felling is the one activity of the farming year in which young men revel, and in many cases it is the only stage in which they deign to participate, for after it is over they set off on journeys (*bejalai*), and do not return until the harvest is well advanced and the crop ready to be carried in and threshed.

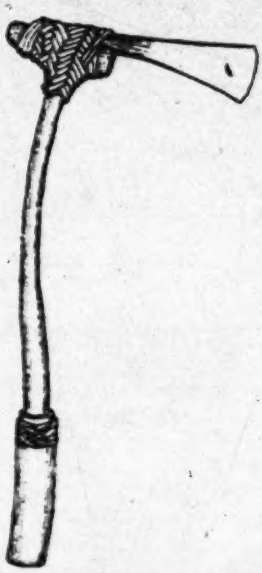

Figure 3. An Iban *bliong*

88. In tree felling two main tools are used: (*a*) the *bliong*, an hafted adze; and (*b*) the *kapak*, an axe of European type. The *bliong* is the traditional implement of the Iban, and they are expert at forging their own adzes and hafting them to hard-wood shafts with *rotan* lashings (Figure 3). Different men have different notions as to the exact size, weight and shape of adze best suited to felling, and many have a favourite *bliong* that is highly prized for its special qualities. At the beginning of each season the blades are re-forged, new cutting edges formed and tempered, and then ground on large whet stones to a fine pitch of sharpness. Axe-heads of European type, on the other hand, are purchased from Chinese traders, but in most cases they are partly re-forged, and handles of Iban design specially fitted. In passing, it may be noted that the Iban system of agricluture, involving as it does, the felling of large areas of virgin jungle, is dependent on the use of iron tools. Such extensive methods could not be followed by a neolithic people. There is however, no archaeological evidence concerning the neolithic period of the Iban, nor is there any mention in their traditions of stone tools. This is not surprising, for metals were in widespread use in eastern Asia and Indonesia for many centuries prior to the first arrival of Europeans. Our earliest historical accounts of the Iban describe a highly developed material culture based on the use of iron tools. Low, in recording observations made during the years 1845-47, wrote of the Iban: "Iron being necessary in the formation of their

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weapons of war, they have studied, and brought to greater perfection its workmanship than others of the mechanical arts;" and he suggests that prior to European contact, the Iban may have "fused and wrought the ore of the island," as did certain Kayan and other tribes.[1] This is one possibility, though it is probable that for many centuries the Iban have maintained economic relationships (similar to those existing to-day), with Chinese and Malay traders, with metal objects, ceramics and beads as their principal purchases; and indeed, it may well be that the Iban were in possession of iron before their arrival in Borneo.

89. To facilitate the felling of large trees, which are always left till last, the Iban construct a special scaffolding, or *tundan* (Plate 7). This is a rough structure of stout poles, lashed together with creepers, and often reaching a height of fifteen to twenty feet from the ground. The purpose of these *tundan* is to lift the axe-men above the buttress roots—which are a feature of so many Borneo trees—and so lighten his task. To commence with, it is usual for two axe-men to work on the same staging, but as the felling approaches its climax, one of them always leaves, and stands well clear, ready to shout advice to his companion. The man left behind continues with the felling until a creaking and rending of timber announces that the giant is about to fall; then, flinging aside his axe, he darts down the slender poles of the rickety scaffolding, and scampers away to a point where recoil is no longer a danger. As the massive tree crashes to the ground, there are shouts of triumph (*manjong*), and the workers scramble forward to see if it has fallen as they had planned. Accomplished axe-men pride themselves on their ability to fell a tree in exactly the direction they choose, and sometimes, by felling a series of trees end to end, they contrive to produce a kind of raised pathway of huge trunks, bridging hollows and depressions in the surface of the farm.

90. The clearing of secondary jungle (*damun*) is a very different sort of task. In its early stages (e.g. during the first five or six years of regeneration), the standard method is slashing with a bush-knife, and in this work women and boys commonly participate. The traditional Iban system of land usage is to cultivate a patch of land for two years in succession, or several times within a brief span of years, and then to let it revert to secondary jungle, for as long a period as possible—usually for about fifteen years. Such secondary jungle is called *damun*, and after fifteen or twenty years it contains trees of two to three feet in girth, between which there thrives a tangle of undergrowth. This *damun* is markedly different in composition from virgin jungle, and its character varies according to the kind of usage to which the land has been previously subjected. A preliminary clearing (*nebas*) of undergrowth is almost always necessary, and, as in the case of virgin jungle, a bush-knife is used, and both boys and women join in the task. After *nebas* has been completed, the operation of *nebang*, or felling, follows. In *damun* this is a straight-forward undertaking, without the technical difficulties and attendant dangers of felling virgin jungle, and it can be achieved in something like a quarter of the time. An axe (*kapak*) is the chosen implement, and the workers move methodically up a slope felling the trees at about waist height. As we have seen, the work of clearing the jungle, in readiness for the all-important burn, begins early in June, when the rites of *manggol* are embarked upon. Conditions vary very widely from farm to farm, but even in the case of difficult *kampong*, felling is usually completed by mid-July, or at least by the beginning of August.

[1]Hugh Low, "Sarawak," 1848, p. 209.

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X243 91. At the conclusion of *nebang* there is a lull for several weeks while the fallen trees dry out in the tropical sun (Plate 8). A conscientious farmer will devote part of this period of waiting to the work of cutting away the branches of the larger trees, and casting them to the ground, so as to build up aggregations of boughs and brushwood, that greatly improve the chance of a good burn. This operation, which is called *ngeredak* by the Iban, becomes of particular importance when bad weather is encountered. Such a subsidiary cutting over of a farm is onerous work however, involving long hours of precarious scrambling among tangled and splintered branches, and very few men tackle the job with thoroughness. There is a definite enough reason behind this reluctance. If really dry weather ensues—say a spell of a fortnight or more without rain—then the farm will burn well even though the trees have been left just as they fell. In this contingency all the arduous work put into *ngeredak* goes for naught. Most men devote a few days to a perfunctory second cutting over of their farms, and then turn to other tasks, trusting to fortune, fervently hoping that magic and traditional ritual observances will bring about the rainless skies that all desire.

The Firing of the Farms

92. For the shifting cultivator the procuring of a good burn is a factor of overwhelming importance. The Iban are fully aware of this, and it is a commonplace amongst them that only after a successful burn will crops be heavy and abundant. Several times I overheard the remark: "If the farm be completely burnt, then the *padi* wants to grow"; and on one occasion when I was examining the damage done to his *padi* by locusts, old Nyala commented ruefully: "If the farm be really burnt, all the insects perish, and when they return the *padi* is already flourishing." ("*Enti angus amat umai, indu utai parai samoa, bisi datai ila udah baoh padi*"). Crop failures are often attributed to a bad burn.

X243 132 93. The success of the burn depends primarily on the weather, but so variable is the rainfall from year to year, and from month to month within the period that elapses between the end of one North-East Monsoon and the onset of the next, that the Iban are not able to plan this stage of their farming activities with any degree of certainty. Each year they hope for and anticipate a dry spell, but just when it will fall nobody knows, and there is always the disquieting memory of seasons when the rain ceased for not more than a few days on end, and many burns were dismal failures. The weeks that follow the completion of *nebang* are weeks of anxiety, and the state of the weather is most carefully watched and endlessly discussed. Years do occur when something of a drought (*kamarau*) sets in; for three weeks there may be clear skies with a burning sun that twists and buckles the bark of fallen trees and parches the leafy floor of the jungle to the dryness of tinder. It is for this that every Iban prays: "In health and happiness may we dwell in this land; and when we fire our farms may they fiercely burn; it is for a drought that we plead." In other years downpour follows downpour, and weeds spring up thickly amid the soaked and cluttered brushwood with which the farm is strewn. When the season is bad, with but brief interludes of fine weather, coming to a decision is no easy matter; indeed, the correct timing of the burn is one of the capital difficulties of Iban farming. When, after several weeks of adverse conditions, the weather changes and for four or five days there is no rain, can it be relied upon to hold, or this a temporary lull, the prelude to even heavier downfalls? This is the dilemma that faces the Iban farmer, and he must solve it as best he can on the basis of past experience. It is easy enough to be

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wise after the event, but life must be lived forwards, not backwards. As the season advances and the onset of the monsoon draws nearer, anxiety increases, and if by the end of August, the farms are still unfired, the whole community turns to magic and ritual, to invoking the gods who govern the elements, and pleading with them by supplication and sacrifice for a brief span of fine weather before it is too late.

94. To illustrate this general situation let us take the felling season of 1949, which happened to be exceptionally wet.[1] At Rumah Nyala, the first rites of the new season began on 1st June. By the third week in July the clearing of almost all of the *damun* farms had been completed, and work on the *kampong* farms came to an end during the first few days of August. The felling had been accomplished without mishap, and throughout the community there was a buoyant and confident spirit. On 13th August, offerings were made to the spirits of the sun, the moon and the stars (an innovation this, which swept the Baleh region during 1949), and by an intricate series of ritual acts the *padi* seed of each *bilek* family was consecrated in readiness for sowing. Immediately afterwards, a conference (*baum*) was held to discuss the burn. The weather during the first half of August had been fine, and it was decided that the firing of the farms should start in two days—on 15th August. But soon after the meeting had broken up, rain began to fall and it continued in torrents throughout the night. On the morning of 14th August, the farms were saturated, and the streams in muddy, swirling flood. The wet weather continued, and by the end of the month the mood of the long-house had completely changed. On all sides there was despondency and much foreboding of the poor crops, hunger and suffering which would result from a bad and late burn. As the rain went on into September, apprehension heightened into alarm, and on 8th September, representatives of the entire community (led by the *tuai burong*) assembled to perform a *gawai minta ari*—a ritual imploring fine weather of the gods.[2] For four days and nights the rites continued, but without avail, and early on 12th September, with rain still falling, the disconsolate farmers dispersed to their separate *dampa*. Later that same morning the weather cleared, and the next day was also fine; another meeting was hurriedly summoned, and on the afternoon of 14th September, most of the farms of Rumah Nyala were fired. Not one of them burnt well. After less than three full days of sunshine only the lighter twigs and stems had dried out, and while these flared up momentarily the rest of the fallen timber, which had been lying about for six or seven weeks, failed to burn. The farms were left thickly strewn with charred boughs and branches, and in some instances the firing was such a failure that tracts of land an acre and more in extent had to be abandoned.

95. As it transpired the dry weather held, with only one or two slight showers, until the night of 24th September, giving a total of about 12 moderately fine days.

[1]Records taken at Kapit show that 17·40 inches fell in May, 9·55 inches in June, 11·33 inches in July, 13·81 inches in August, and 12·76 inches in September. The total for the year —1949—was 155·75 inches. (For these figures I am indebted to Mr. D. L. Leach, Director of Lands and Surveys, Sarawak).

[2]One of the ritual devices employed at Rumah Nyala was remarkable. Offerings were made to the rain spirits, and then a fishing basket (*pemansai*), with an open weave, and quite unable to hold water, was exposed on the *tanju* of the *dampa*. The *tuai burong* then uttered these despairing words:

"It is with you, oh fishing basket that we plead for fine weather;
Thus we have filled you with offerings abundant, offerings unstinted.
If you, oh Rain Spirits, can fill this fishing basket do not stop the rain from falling,
But if you fail to fill it, stop utterly the rain.
Oh do not mock our efforts!"

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243 138 In retrospect it is plain that 24th September was the day when best results would have been obtained, but after the consistently bad weather of late August and early September and with the imminence of the wet season, no farmer was in a mood for running risks. As we have seen most of the community took a panic decision and fired their farms on 14th September, after little more than two days of sunshine; in all these cases the burn was a bad one. Three *bilek* families, however, who were working *damun* land in the lower Sungai Nyunggau, did hold on until 21st September, and obtained burns which were a very marked improvement on those of the rest of the house. During this critical period the Iban often sought my advice, asking if Europeans did not have some method of controlling the rain, or, at least, of foretelling the weather. But without proper meteorological forecasts nothing could be done to help them, and one was made keenly aware of the uncertainty that besets the primitive cultivator. For him, the forces of nature are fickle and unpredictable, and the magic and ritual to which he has recourse are the best stratagems he knows for coping with problems that are essentially intractable. And the uncertainty is sharpened by the fact that the very subsistence of a man and his family depends on the sort of solution that is reached.

96. During 1949, several long-houses in the headwaters of the Sungai Sut succeeded in firing their farms early in August, before the deterioration of the weather, and they had completed the sowing of their *padi* before the first of the burns at Rumah Nyala took place. From all accounts this sort of thing is a commonplace occurrence. Farms may be fired at any time from early August to late September, and within each district it is usual to find a considerable range of variation in the dates on which farms are fired. Indeed, when the *dampa* system is being followed, there is sometimes a gap of a month or more, between *dampa* groups within the same long-house community.

243 97. Should the farm of a *bilek* family stand all alone on its hill-side, its owners may fire it whenever they think fit, though it is usual to make a public announcement of their plans. When farms have common boundaries with one another, on the other hand, it is obligatory for all the *bilek* families concerned to confer together, and come to a common decision. This is necessary for two main reasons: [73] (*a*) to avoid the possibility of accident, for in a dry season the blaze can spread with such speed that persons on adjoining farms may be trapped and burnt to [688] death;[1] and (*b*) to avert the danger of the blaze spreading and causing damage to the ritual whet stone (*batu manggol*) of another *bilek* family—a serious offence this.

243 372 98. To fire (*tunu*, v.f. *nunu*) a farm, large torches (*sempun*) of lashed bark are used. These torches, which have been prepared in advance, are lit at the *dampa*, and the men of each *bilek* family hurry off to the foot of their *umai*. Without delay, but in silence, the fire is started in three separate places; then, shouting at [774] the top of his voice, each man calls upon the Wind Spirits to fling themselves upon the farm, and the Fire Spirits to devour every branch and bough, and leave nothing but ashes behind them.[2] After a drought (*kamarau*) of three weeks or

[1] The Iban tell stories of this happening, and a number of cases of men being 'burnt alive' during the firing of the farms are recorded in the "Sarawak Gazette"; e.g. 1893, p. 171, and 1901, p. 237.

782 [2] As an example of the prayers (*sampi*), which are uttered at the firing of a farm, let me quote the following version collected at Rumah Nyala in 1949:

"Oh Wind Spirits where are you?
Oh call, oh summon your kith and your kin, your offspring, your people all;

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more, the blaze sweeps across a farm with extraordinary speed and ferocity, the flames leaping and roaring high into the air, and after a few hours little remains, even of an *umai* hewn out of virgin jungle. This, at least, is what the Iban claim, and judging from the burnt out stumps of massive trees, which I was shown (relics these, of dry season firings), it is no exaggeration. The firings which I in fact witnessed, were much more proptracted and less spectacular affairs. In 1949, in particular, the season was an adverse one; here and there accumulations of leaves and branches flared up strongly, but the flames would not spread far of their own accord, and it became necessary to start scores of small fires in different parts of the farm. With remarkable agility the Iban clambered bare-foot from log to log, flourishing their smouldering torches in the air; skilfully avoiding burning patches they sought out untouched enclaves, and so fire after fire was kindled to the accompaniment of a high-pitched trilling cry—a cry to encourage the wind. Everywhere there were islands of intermittent flame, each with its own column of grey or yellowish-white smoke drifting up to form an opaque haze, through which the tropical sun dimly shone. But when the fires had died down, the farm was still thickly strewn with trees, so that from a distance of a few hundred yards, one wondered if the burn had taken place after all.

99. Within two or three days of the burn the sowing begins. For the Iban this is an important occasion, and a series of rites are meticulously performed as the first *padi* seed is planted. If the burn has been a good one, the process of sowing is greatly simplified, for the *tegalan*, as the surface of the farm is called after firing, is free of obstructing branches and debris, and there is a copious bed of ash to receive the seed. A bad burn, on the other hand, forces a good deal of extra work upon the unfortunate farmer, for, before he can dibble in his seed, he must first clear the ground of accumulations of unburnt brushwood that threaten to choke and encumber the growing *padi*. This operation of continuing with clearing after the burn is known as *ngebak*. In 1949, at Rumah Nyala, so much time had to be spent in *ngebak*, that most farmers were able to sow only about 80% of the area which they had felled, and in some cases little more than half of the farm was sown. In doing *ngebak*, the farmer is concerned not in producing ash, but merely in clearing the surface of unwanted debris. If his farm contains a rocky gully, he will use this as a dump, gathering up unburnt boughs and flinging them into it. In other places he may be compelled to hack up the smaller branches with his bush-knife, and build a series of bonfires (Plate 9). In passing, it may be noted that the Iban make no attempt to scatter ash (*abus*) over the surface of the farm. Ash is recognized as beneficial—I have heard Iban attribute luxuriance of growth to the fact that a particular clump of *padi* was planted in an ash heap—but the effort involved in scattering ash over the ground is not deemed to be worthwhile. Nor is there any attempt systematically to stack branches prior to burning (as in the *icitemene* cultivation of Central Africa), so as to produce an even distribution of ash.

Come from Sarawak and from Pontianak,
Come from Brunei, and the far away ocean.
Oh dash yourselves against my farm,
Fling up the debris, tear up the roots,
Roll over the logs, hurl down the buttress roots,
Devour outright, devour utterly,
Leave no remains, no stumps unburnt,
Leave not a branch, not a bough but in ashes.
Kor-r-r-r-r . . . . Wind and fire
Do your devouring!

100. *Ngebak* and sowing are carried on more or less simultaneously. Thus a man and his wife will clear six or seven square poles, and then retrace their steps to dibble and sow this area, and so on. If there be several men in the labour team, most of them will devote their time to *ngebak*, leaving one of their number to dibble. Following a good burn however, all of this arduous re-clearing of the land is avoided, and planting goes ahead without interruption.

The Planting of the Padi: Dibbling

101. The Iban method of planting *padi* is a simple, though onerous one. Its leading feature is the sharp division of labour between the sexes. In planting a farm, man and woman work together, the man ranging on ahead with his dibbling-stick, and the woman following him up to cast seed into the holes which he has made. A dibbling-stick (*tugal*) is a hardwood staff, usually about 5ft. 6ins. in length, with a circular cross-section. Often it is notched at the top to afford a better grip, and flared out slightly at the base, before tapering away to a point. Held firmly in the hand, and at about shoulder height, the dibbling-stick is thrust sharply into the ground, and then withdrawn with a very slight twist of the wrist (Plate 10). Almost all men are ambidextrous, making holes first on one side and then on the other, and reaching into inaccessible corners with ease. In good soil a dibbling-stick makes a conical hole about three inches in depth, and one and a half inches in diameter, at the surface. When traversing unobstructed ground, Iban men attain a very high pace of dibbling, and I have timed men to exceed 110 holes per minute. But this sort of pace is only encountered on ritual occasions, when visiting men enjoy showing off and competing with one another. A detailed series of measurements showed that in the normal course of everyday work, most men maintain a dibbling pace of about 60 holes per minute.

102. Of wider significance is the standard placement of dibble holes over a given area. The method I used to calculate this was to cast a yard rule at random onto a dibbled tract of *umai*, and then make a count of the number of holes in one square yard of ground. The dibbling of many different men was studied, and a total of 56 counts made. There was an overall range of from 8 to 16 dibble-holes per square yard, and a difference in individual averages ranging from 10·3 to 13·4 holes per square yard. The general mean for the 56 counts was 12·2 holes per square yard, and the median and mode were both 12. If the general mean of 12·2 dibble-holes per square yard be accepted, this represents an average of 59,048 holes per acre.

The Planting of the Padi: Sowing

103. In the wake of the dibblers move the sowers. Tied around her waist, or grasped in her left hand, each woman carries a small seed basket, or *keban*. Measuring about six inches in diameter and eight to nine inches in depth, a *keban* can comfortably hold several pints of *padi* seed. The plaiting of these *keban* is woman's work, and the best of them, made from fine strands of *rotan*, are decorated with beautiful spiral patterns (Figure 4). At the foot of the slope being planted, stands a larger type of basket (about 10 inches in diameter, and 18 inches in height), called an *uyut*, which contains upwards of two or three gallons of *padi* seed (*benih*), and to this the women return, when necessary, to replenish their *keban*. This *uyut* is surrounded by a set of ritual prohibitions (*pemali*).

104. When sowing (*menih*), a woman takes a handful of seed from her *keban*, and bending down so that her hand is within about ten inches of a dibble-hole, she ejects a tiny stream of grain from between her index and middle fingers. This

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operation calls for considerable dexterity and concentration, for the seed has to be made to enter a hole of not more than about one and a half inches in diameter. Each hole is sighted, and then the seed directed towards it with a little flick of the hand (Plate 11). From one handful of seed a woman sows about seven or eight holes. (A count of 50 instances gave a range of from three to fifteen, and a general mean of 7·5 holes sown per handful of seed). Women vary a good deal in skill. A novice finds it necessary to place her hand within a few inches of the ground, and even then she may not succeed in getting all of the seed to enter the hole for which she is aiming; she also has difficulty in controlling the number of grains ejected, and commonly has an average of five or six more seeds per hole, than does an accomplished sower. In contrast, an expert sower deftly flicks the seed from a distance of about 18 inches, maintains an extremely steady rate (i.e. number of grains per hole), and seldom has seeds fall outside the dibble-hole. The pace of sowing varies from about 40 to 65 holes per minute, according to skill and the state of the farm; after a bad burn, for example, the surface is littered with logs, and this slows up both dibbling and sowing.

Figure 4. An Iban *keban*, or sowing basket

105. In studying sowing methods, I made a count of the number of grains in 192 different dibble-holes, taken at random, on more than a dozen different farms. This count showed an overall range of from 5 to 35 grains per hole, and a general mean of 11·7 grains per hole; the median was 11 and the mode 12. A detailed analysis of the sowing styles of 13 different members of Rumah Nyala, from unmarried girls to women of over 60 years, gave personal averages varying from 9 to 16 grains per hole. In Table 3, the sowing styles of six of these women are compared. Each average, etc. is based on a series of more than ten separate observations. All six women were well practised in the art of sowing, but it will

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243 be seen that they differed considerably in style and skill, with Ja at one extreme, and Lintu at the other.

Table 3: Sowing Styles of Six Iban Women Compared

	Names and Ages of Women					
	Ja (60 yrs.)	*Limau* (28 yrs.)	*Gering* (27 yrs.)	*Nantai* (33 yrs.)	*Limau* (38 yrs.)	*Lintu* (31 yrs.)
No. of seeds per hole (average)	9·5	10·2	11·8	12·3	15	16
Range in No. of seeds per hole	5–13	5–21	5–21	10–15	11–24	8–35
Rate: No. of holes sown in one minute (average)	55	58	62	60	46	50
No. of holes sown per handful of seed (average)	5	12	7	5	10	7
Distance (approx.) of hand from hole	12"–18"	9"–12"	9"–12"	9"–12"	6"–12"	3"–9"

106. Sowing (*menih*) is a much more onerous task than dibbling. Ranging on ahead a man thrusts in his dibbling-stick as he choses, and the more or less regular pattern of holes which he produces is largely fortuitous, and not the outcome of any carefully premeditated plan. A woman, on the other hand, must seek out these dibble-holes one by one, and cast into each its quota of seed. On broken ground and in areas cluttered with unburnt logs and boughs, the holes are often difficult to detect; and whereas a man can jab in his *tugal* from a distance of five feet and more, the woman must clamber much closer before she can eject the seed from her hand. Little or no attempt is made to fill in the dibble-holes by treading earth into them. In general, sowing takes about half as long again as dibbling, and so the men always finish first. But it is rare for men to assist in the work of sowing, and they turn instead to such jobs as *ngebak*, fencing, or hut building, or merely lounge in the shade to smoke, and chew betal.

The Sowing Rate Observed by the Iban

107. From our basic data for dibbling and sowing it is possible to calculate the mean sowing rate in gallons (*gantang*) per acre. As we have seen the average number of dibble-holes per square yard was 12·2, and the average number of grains per hole, 11·7. This represents an average of 142·7 grains per square yard, or a sowing rate of 5·75 *gantangs* per acre.[1] This calculation is, however, based on the assumption that the whole of the area in question is sown, whereas in fact this is seldom, if ever, the case. Normally an appreciable proportion of farm acreage is taken up by stumps and unburnt logs, but a general estimate of the extent of this lost ground is difficult, for conditions vary so widely. In the case of a poorly fired *kampong* farm the proportion may rise to 20% or more; for a well fired *damun* farm, 5% or under would be typical; and I have seen areas of *krukoh damun* farm land (i.e. secondary jungle, fired two years in succession), in which, with a few negligible exceptions, the whole of the surface was available for planting. The average sowing rate of 5·75 gallons per acre, must be accepted therefore with these reservations in mind.

[1]This computation is based on the supposition that there are 120,000 grains in one gallon of *padi*. A count showed that half a pint of Iban *padi* seed contained 7,500 grains. There is, of course, some variation in size of grain from variety to variety of rice, but the type chosen was of medium size.

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108. Attention has already been drawn to individual styles in dibbling and sowing. The same sort of variation is discernible in sowing rates. In the planting of a farm it is usual for a husband and wife to work together, and study of a number of different married couples reveals considerable differences in sowing rates. In Table 4, three different married pairs, covering the full range of variation, have been selected for comparison.

Table 4: Variation in Sowing Rates of Married Couples

Names of husband and wife	*Average dibbling rate (holes per square yard)*	*Average No. of grains per dibble-hole*	*Sowing Rate (gallons per acre)*
1. Agun and Limau ..	13·4	15	8·1
2. Kana and Gering ..	11·4	11·8	5·4
3. Entap and Rabai ..	10·3	9·1	3·77

109. The sowing of a farm begins within a day or two of the completion of firing, and this may be at any time from early August to late September. Its duration depends on the area of the farm and the size of the labour team—the number of women available being a factor of crucial importance. A survey of the farms of Rumah Nyala in 1949 shows that periods varying from 26 to 41 days were devoted to sowing, and that the last *bilek* family to complete the task did so as late as 28th October.

The Planting Pattern of an Iban Farm

110. The sowing of an Iban farm is a carefully planned operation. A *bilek* family may possess as many as fifteen or more different kinds of *padi*, and these are planted each in its own plot, in a predetermined order. The planting order is determined by two main considerations, the one agronomical, and the other ritual. The first two types of *padi* to be planted are (*a*) *padi pulut*—a class of glutinous rices; and (*b*) *padi muda*—quick-ripening rices with maturation periods of only 150 days, or thereabouts. *Padi pulut* is planted first because, say the Iban, it does not thrive if planted late in the season, and *padi muda* because of a desire to harvest and eat new rice as soon as possible. These two special varieties are followed by different kinds of *padi taun*—rices which provide the ordinary day to day diet of the Iban. Here, planting is with an eye to maturation periods, so that reaping order may follow sowing order, and each variety be ready for plucking at the proper time. Last to be sown are the all-important ritual and sacred strains of rice, known to the Iban as *padi pun*, and *padi sangking*. These ritual rices, and *padi pun* in particular, are the abode, the sanctum sanctorum of the soul or spirit of the *padi* plant. The sowing of *padi pun* is marked by the foremost rites of the Iban calendar, and this sacred rice is the plinth, as it were, upon which the whole elaborate fertility cult of Iban agriculture is based.

111. The *padi pun* of a *bilek* family is usually a variety of rice possessing some peculiar characteristic; many, for example, own *padi pun* the kernel of which is red or pinkish in hue, and in other cases the hull has a dark brown tinge which stands out very distinctly as the *padi* ripens in the fields. Very often a family's *padi pun* has its own myth of supernatural origin, and is hedged about by prohibitions (*pemali*) and attitudes of respect and deference. No other ritual possession ranks more highly, for not only is *padi pun* the abode of the chief *padi*

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spirits (*antu padi*); it is also charged with stored-up fertility—the fertility acquired during countless magical rites performed by previous generations. *Padi pun* is never sold or given away, and each year only part of the seed which a family holds is sown, as a safeguard against the possibility of crop failure through the depredations of animals and insects. Only a very small area of *padi pun* is planted—in most cases somewhere between twenty and forty square yards. This patch, the last to be sown, is the ritual centre of the farm, and the site of all the major rites of the agricultural cycle. Close by are planted clumps of *sengkenyang* (Plate 19)—magical plants which are believed to watch over, protect and minister to the needs of the growing *padi*.[1] Around about are grouped the *padi sangking* (sacred rices of subsidiary importance); usually three or four different varieties are cultivated, the individual areas varying from about 50 to 400 square yards in extent.

112. The sowing pattern of a farm is very largely determined by the ritual requirement that when a crop is harvested, there must be no break in the path of the reapers (*jalai ngetau*). In other words, the reapers must move—day by day—in uninterrupted progression from section to section of the farm, gradually converging on the *padi sangking*, and finally on the tiny patch of *padi pun*. As a woman proceeds with the protracted task of reaping, the souls of the *padi* she has harvested are believed to follow her, and it is to preclude the possibility of the souls of the rice getting lost that a continuous route must be maintained. Thus, should the reapers come to a track bisecting the farm, a special ritual has to be performed. Offerings (*piring*) are made, and a length of bamboo containing glutinous rice is laid across the track to form a causeway for the soul of the rice. The women place the offerings in their reaping baskets (*sintong*), and as they step across the track, intone ritual phrases calling on the *padi* spirits to follow them. Week after week the reaping continues; the route is invariably circuitous, but circumspectly the spirits of the rice are conducted to the spot where the *padi pun* itself is standing. Here, with elaborate ritual, all the rice spirits are summoned, and, with the last of the *padi pun* to be reaped, escorted back with great ceremony to the family's *dampa* to be stored safely away. In order that this continuity in reaping may be maintained, the various kinds of *padi* which a family cultivates must be sown in sequence, so that each section is ready for gathering when it is reached. This means a rough grouping of varieties in terms of their maturation periods. Cases of mismanagement occasionally occur. In 1951, harvesting on one of the farms of Rumah Nyala was held up because a section of not quite ripe *padi* blocked the advance of the reapers, while further on there was grain ready for plucking. Such a contretemps soon becomes known throughout the community, and there is much raillery at the expense of the bungling family.

Seed Selection

113. Arranging the sowing order of a farm is the duty of the senior woman of the family. This woman is also responsible for the selecting of seed, and for storing it with proper safeguards. A woman selects seed (*benih*) in the ordinary course of reaping, tossing the chosen panicles into a separate container (*uyut*) which she carries suspended on her back. This process of seed selection is termed *buntih*, v.f. *muntih*. In general a woman picks out the most perfectly formed panicles (*tangkai*) which she can find, and these are separately threshed,

[1] Many Iban also plant sweet smelling flowers and plants around about their *padi pun*; these they say are to delight and make happy the children of the *padi* spirits, and the children of Pulang Gana—the god of fertility. ("*Anak antu padi, anak Pulang Gana, rindu meda bangkit*").

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winnowed and stored. On one occasion however, I observed a woman deliberately putting poorly formed panicles into her seed basket. She said that she was doing this because she had pity on such small and imperfect *padi* plants ("*sayau ka leka mit*"), and wanted to give them another chance—a good example this of the highly personal feelings which the Iban have about their *padi*.

114. All Iban take the greatest interest in new or uncommon varieties of *padi*, and I encountered a number of cases of men having collected seed on their travels (*bejalai*). Majau, a man of Rumah Nyala, lost his *padi pun* when his *dampa* was destroyed by fire; on a subsequent journey to the Ulu Rejang he managed to procure seed from a Kayan family, and this, after appropriate rituals, became his new *padi pun*. Kubu, another man of Rumah Nyala, went in 1948 on a trading expedition to the Penihing people of the Upper Mahakam River. He returned to Sarawak with small quantities of three different kinds of *padi* seed, having purchased two of them, and purloined the third. In 1949 all of this seed was planted and the resulting crop stored away so that larger areas could be sown in 1950. The purloined variety, of which Kubu was more than proud, had exceptional characteristics: the length of the rachis was about 14 inches, with some 27 branches, carrying between 530 and 560 grains. This inter-change of *padi* seed, both sanctioned and unsanctioned, among the hill tribes of Borneo shows every sign of being a long-established custom.

115. After the harvest each variety of seed is stored in a separate container. These containers are made either from plaited cane, or from strips of bark sewn securely together; their most important feature is a lid that fits tightly enough to protect the seed from mice and rats. When filled—they vary in capacity from about two to ten gallons—they are stacked away in the loft (*sadau*), or around the walls of the *bilek* until the time for sowing returns. Although men take an active part in the rituals associated with sowing, it is rare to find a man with an accurate knowledge of all the varieties of seed owned by his *bilek* family. This is essentially the woman's province, and whenever I began to record the names, and other details of *padi* seed, the man of the family, hopelessly out of his depth, would hurriedly summon his wife, or some other woman of the family to enlighten me.

116. Iban families always store away considerably more seed than they are likely to require at the next sowing. My investigations showed that after the harvest a family of average size (i.e. 5-6 members) had seed holdings amounting to from 50 to 60 gallons, or approximately double their probable requirements at the next sowing. On May 20th, 1950, for example, the *bilek* family of Kubu, with six members, held the seed of 18 different strains of *padi*, the quantities varying from 1½ to 5 gallons, and totalling 57 gallons. Not much more than about half of the seed of each strain is sown, and the residue is stored away again lest any section of the farm fail or be destroyed. After the harvest however the old seed is consumed, and replaced by grain from the new crop.

Catch-Crops

117. A special feature of Iban agriculture is the cultivation of a wide range of catch-crops, interspersed on the same land as the *padi*. A few, such as *ensabi* (a kind of mustard plant, the leaves of which are eaten), are sown separately, immediately after the burn. Others are planted simultaneously with the *padi*, their seeds being mixed up in the same sowing basket as the *padi*, and sown into the same dibble-holes. The most important of these are:

(*a*) *buah rampo:* cucumber;

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(*b*) *buah entikai:* pumpkin;
(*c*) *buah empusut:* luffa sp.;
(*d*) *buah labu:* gourd.

All of these are ready to eat before the *padi* has ripened, for the Iban delight in the fruits of these plants when they are still immature; and again, cucumber and pumpkin leaves are cooked as vegetables as soon as they have formed. In good years there is often a glut. Around the edges of the farm clearing, and in the immediate vicinity of the hut (*langkau*) which stands at its centre, various other plants are grown, such as: cassava (*empasa*), maize (*lingkau*), *changkok* (Sauropus albicans), and pineapples (*buah nanas*).

The Weeding of the Farm

118. One of the greatest difficulties with which a shifting cultivator has to cope is weed growth. Under certain circumstances it may even seriously interfere with affairs before the burn. This happens if the period between the felling and the firing is too protracted, in which event weed growth and general regeneration choke the fallen timber and prevent a good blaze. This re-growth which springs up before the burn is termed *pelangus*, and occasionally it becomes so thick that part of a farm has to be abandoned. I was able to observe a striking case of this at Rumah Nyala in 1949. Majau, a young and inexperienced farmer who had but recently set up his own *bilek* family, felled about 3 acres of secondary jungle (*damun*) early in May, hoping, he said, for an early burn. Because of bad weather however, he did not succeed in firing his farm until 14th September, by which time it was so densely covered with *pelangus* that about half of it did not catch at all, and of the remaining 1½ acres only those parts which he had slashed a second time burnt well. The outcome was an exceedingly poor crop, for there was healthy *padi* on not much more than a single acre.

119. Within a few weeks of the burn the weeds begin to reappear. Their prevalence and their nature depend very largely on the type of land which is being farmed. After the felling of primary jungle, for example, weed growth is slight, but after two consecutive firings of secondary jungle (i.e. a *krukoh damun* farm), weeds are usually prolific with *lalang* (Imperata sp.) and other virtually ineradicable grasses, ferns and shrubs having invaded the land. These factors will be discussed in the section on land usage.

120. Weeding begins, in a desultory way, even before sowing is completed. On a number of occasions at *belaboh padi pun* rituals, I observed the women whose farm it was devote their spare time to weeding, leaving the business of sowing to their guests from other *bilek* families. Within a day or two of the completion of sowing the rite of *bebasu arang* ('washing the charcoal') takes place. This represents the formal termination of the many prohibitions (*pemali*)[1] which are in force during the period of planting. Weeding is then ready to begin, but its commencement is not marked by any kind of ritual.

121. Of all the labour stages in the agricultural cycle weeding is the most onerous and irksome. It has none of the excitement of felling, and lacks the conviviality and the heightened emotion associated with the many rituals of sowing. Weeding is uninviting, unremitting work calling for diligence and

[1] For example, during the sowing period it is forbidden to pluck the eyebrows or eyelashes (*pemali mantun bulu mata*), as this is symbolical of the young *padi* shoots being plucked out by birds. Again, there must be no forging, etc. of iron (*pemali ngamboh*) for this causes the young padi to become 'feverish' (*angat*) and sickly. In all there are about a score of these *pemali*.

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disciplined effort. But at the same time it is not a task of immediate urgency; it is easy for the lazy and the dilatory to find excuses for shirking their responsibilities. In fact this is what happens, so that among the various *bilek* families of a long-house one finds wide variations in the time and industry devoted to weeding. At Rumah Nyala one or two farms were weeded with the greatest of care, while others were left either unfinished or only perfunctorily covered. Felling, dibbling, sowing and reaping are standardized operations which every *bilek* family must perform, while, in contrast, weeding (like *ngeredak*) is a task which may be more or less thoroughly discharged. This is not to say that the importance of weeding is underrated. Time and again I overhead such statements as "If the weeding is not thoroughly done there will not be a good crop" ("*Enti enda mantun badabadas enda bulih padi*"); "Amid weeds *padi* refuses to thrive" ("*Alam babas enggai padi idup*"); and "The grain of unweeded *padi* lacks substance" ("*Padi enda di mantun nadai isi*"). On another occasion a group of men made the point that after a thorough weeding insect pests are fewer, and this is greatly to the advantage of the growing *padi*.

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122. On the completion of sowing there is usually a brief lull in farm work, but within about a week all conscientious families have embarked on their weeding. Weeding (*bantun*, v.f. *mantun*) is predominantly the work of women. Girls begin to join in the work with the approach of adolescence, and they continue year by year until old age prevents their participation. At Rumah Nyala, the most assiduous weeders were old ladies of between sixty and seventy years, and there were only two non-participants, one of sixty-five and the other of seventy years, both of whom were partially crippled. To protect herself from the sun each woman wears a jacket (*kelambi*) of cloth, and a huge, mushroom-shaped hat (*tanggi*) fashioned from the fronds of a jungle palm (*daun biro*). The commonest tool is a short-bladed bush-knife, or *duku*, but some families equip themselves with specially made implements called *ilok*. A typical *ilok* from Rumah Nyala had a round-ended, iron blade (2" × 6"), set at right-angles to a slender shaft (4" in length) which was embedded in a wooden handle shaped to fit the hand. Women engaged in weeding leave their *dampa* soon after dawn, taking advantage of the coolness of the early morning, but they normally remain at the farm throughout the day, pausing for food and rest at about mid-day, and returning home towards late afternoon. Those actually living on their farms, in a *langkau*, or farm hut, begin even earlier, and they are also able to make use of the hour or two of coolness at the end of the day. In thorough weeding an entire area is worked over methodically by hand, the women bending, kneeling or squatting between the clumps of growing *padi*, and uprooting or cutting away the thick carpet of weeds that covers the farm. Under these conditions progress is slow, for a woman must take care not to injure the young *padi* plants, and the difficulty of her work is often increased by the steepness of the terrain, and the fact that her path is obstructed by stumps and fallen logs. To lighten the task of weeding the women of a *dampa* try, as far as possible, to organize work groups on a labour-exchange basis. Usually there are three or four *bilek* families represented in each group, and all the women concerned move from farm to farm in strict rota, spending one day at each. Companionship and gossip, it is said, make the drudgery of weeding easier to bear.

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123. The main brunt of weeding falls then, upon the women, and if sufficient women be available no man will stoop to the task. Nevertheless, the time comes when most men are compelled to do so. One of the special features of the Iban

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X 243 462 system of economic organization is the very limited size of the labour force of the average *bilek* family. Of the 25 *bilek* families at Rumah Nyala, only five had more than two female workers (girls 11 years of age and over are included), and eight families contained only one female worker. This means that in many cases, sickness or pregnancy leaves a *bilek* family without a woman to weed its farm. If he wants to preserve his crop a husband must then set about weeding it himself. Normally, however, a man does not find himself in this predicament until he has reached middle-age and taken over the management of his *bilek* family's farm, by which time his prejudices against indulging in 'woman's work' will have mollified a little. Among young and unmarried men there is a very strong antipathy against having anything to do with weeding; to say the least it is unmanly and anyone who did participate would excite the ridicule of his fellows. Young men are perfectly willing to join in the tougher pursuits of felling and dibbling, but this done they set off—gathering jungle produce, tapping rubber, working for wages—and do not return until the harvest is ready to be threshed, or until the next felling is due to begin. Young men follow this pattern as long as they are able, leaving the working of the farm to their elders. Only rarely does it happen that a man is obliged to take over management before he has reached the age of thirty, and the average age for the assumption of this responsibility is about thirty-five years; few men take to weeding before they have reached their middle forties. (This matter is discussed in greater detail in the section dealing with the economics of agriculture).

X 243 461 124. This leads us to the important point that a crucial limiting factor in Iban agriculture is the area which the women, assisted by the older men, of a *bilek* family can effectively weed in the time available to them. What is this area? As already indicated, the standard of weeding varies very considerably from farm to farm, but we may, nonetheless, usefully take the average area per worker for an entire community. At Rumah Nyala, in 1949-50, the estimated total area of land actually under *padi* was 89 acres. The total number of workers engaged in weeding was 60, and of these 49 were women and girls, and 11—assisting males, with an average age of about 49 years. This means that the average area weeded per head was about 1·5 acres; for individual *bilek* families there was a range of from ·5 to 2·0 acres per worker. It is significant to note that, in general, men assisted in the weeding of only those farms where the average area to be weeded would have otherwise been in excess of 2 acres per woman worker. Men, in fact, assisted on 11 different farms. If they had not assisted, the average area to be weeded per woman worker would have been 2·6 acres, with a range of from 2·0 to 3·25 acres per head. By joining in the work the 11 men mentioned, brought this insupportably high average down to about 1·5 acres per head, with a range of from 1·3 to 2·0 acres. In the fifteen other farms where women alone worked, the average area weeded per head was about 1·5 acres, with a range of ·5 to 2·0 acres. From these data it appears that the maximum area which one worker can effectively weed is about 2 acres. If however, the weeding is painstakingly done the average falls below this figure. For example, the farm of Rumah Nyala which was the most thoroughly weeded was that of Bangi, and in this case the average area per worker was about 1·6 acres.

The Guarding of the Farms

X 243 125. At Rumah Nyala in 1949-50, weeding began early in November, and continued until about the end of December, or the first week in January. By the

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end of the weeding period, the first *padi* to be planted is approaching maturity,[1] and about to burst into ear. There now ensues a phase of about a month or more during which the ripening *padi* has to be guarded from marauding animals. For some time previously—during the height of the weeding—the men of each *bilek* family have been preparing for this vital manoeuvre.

126. Most important of all is the construction of a farm hut, or *langkau umai*. Farm huts vary a good deal in style and size, depending on the site of a family's *dampa*. If the farm happens to be within sight of the *dampa*, and near enough to be reached within a few minutes, a family usually satisfies itself with a roughly-built *langkau*, which is used as a watch-house while the padi is ripening, and subsequently as a storage place during the harvest; except during the guarding period however, the family sleeps at, and operates from its *dampa*. On the other hand, if a farm be distant more than about twenty minutes from the *dampa*, it generally happens that the family concerned builds a substantial *langkau umai*, and uses it as a semi-permanent base during most of the agricultural cycle. The building of such a *langkau* cannot—obviously—begin until after the burn. Quite often a beginning is made during the time of dibbling, but the main work is accomplished while the women are engaged in weeding. Poles for the frame-work and *rotan* to lash them together, are fetched from neighbouring jungle; the walls are fashioned from large sheets of bark, and the roof from bark shingles. Most *langkau* consist of a single, small room (about 12 ft. × 12 ft.), opening directly onto a small, open and raised platform (*tanju*) (Plate 14). The building of *langkau* is an exclusively male task. Always a central and elevated site is chosen, overlooking as much as possible of the farm. Once the building is complete, members of the *bilek* family begin spending the night there, and during the

[1]The Iban recognize the following stages in the growth of the *padi* plant:
(1). *ngemulu idong* (like the hairs of the nose); e.g. first emergence of the shoot from the ground.
(2). *narum* (like needles).
(3). *niko pipit* (like the tail of the rice sparrow—Munia sp.).
(4). *bayam ribut* (plaything of the winds).
(5). *ngelambong batang anak* (above the smaller logs).
(6). *basah kain Beketan* (the skirt of a Bukitan woman will become wet when she walks through the *padi*).
(7). *basah kain Iban* (the skirt of an Iban woman will become wet when she walks through the *padi*.
(Another name for this stage is *dara biak*—like a girl who has just reached puberty).
(8). *dara tuai* (like a girl of say 18-20 years).
(9). *betumboh dan* (the growing out of branches).
(10). *ngandong laki* (pregnant like a man).
(11). *ngandong indu* (pregnant like a woman).
(12). *blah buloh* (splitting open like a bamboo shoot); i.e. the emergence of the panicle begins.
(13). *ngetup dilah* (like a tongue protruding); i.e. the panicle.
(14). *baru bekangau* (newly calling from afar); i.e. the *padi* spirits are thought of as calling to one another in the fields.
(15). *baru baka chuit* (newly fully out).
(16). *tebai murai* (thickly mature).
(17). *brat dan* (heavy branches).
(18). *tuai buah* (mature fruits).
(19). *mansau mulut* (ripe lips).
(20). *betengan tangkai* (half ripe panicles).
(21). *rapas tangkai indu* (the panicle of the main plant of each *padi* clump is fully ripe).
(22). *nyau ngankong* (hanging down with ripeness); i.e. the height of the harvest.
(23). *nyau patah patong* (the panicles are broken at a nodule and hanging down with ripeness).

It will be observed that these terms offer several examples of the manner in which the Iban personify their *padi*.

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critical ripening period and the early stages of the harvest, someone is always present to keep watch over the *padi* (Plate 15). At Rumah Nyala in 1949-50, there were 12 *bilek* families with substantial *langkau umai*, suitable for semi-permanent residence, while 14 others had less pretentious huts, which were only slept in during periods of special vigilance.

127. The months of November and December, when weeding is taking place, cover critical stages in the growth of the young *padi*. According to Iban notions, the *padi* plant is liable to become afflicted with a range of various illnesses (*tabin*), and they apply to these the same terms used to describe certain human ailments. Green smut, for example, which attacks and destroys single kernals, substituting for them large sclerotial masses of its own, is equated with warts (*butir*). Again, *padi* is often described as suffering from a cold (*renga*) or a headache (*pedra*). While the young *padi* is forming a careful watch is kept over the farm, and if any disease makes itself evident, rituals are at once performed. The general purpose of these rituals (*memali umai*) is to restore the ailing *padi* to health. If the trouble be serious, a clump of *padi pun* is taken to the long-house, placed in a shrine (*ranyai*), and the gods summoned to succour and treat it. It is then carried back to the farm to be re-planted, where prayers are uttered (cf. Para. 61), and magical potions scattered over the rest of the growing *padi*. At the same time magical rites directed at driving away insect and animal pests are widely performed.

Traps, and Other Protective Devices

128. During the period of weeding the men begin to turn to the devising of other measures for the protection of their crops. A common stratagem is the building of a strong palisade of stakes bordering those parts of the farm judged to be especially prone to attack by deer and pigs. Others wait until the panicles have emerged and then clear a lane, five or six yards in width, along the main farm boundaries. The theory is that animals are wary of exposing themselves by crossing this circumvallation, and that if they do take the risk there is a good chance of their being seen and chased away. Traps are also widely used, there being three main types:

(*a*) the *peti*, a spear-trap for pigs,
(*b*) the *bubong*, a large box-trap for monkeys,
(*c*) the *tinya*, a spring-pole trap for smaller animals.

Most popular of all is the *peti*. It consists of an upturned, forked sapling, one limb of which is embedded firmly in the ground, while the other, to which an extremely sharp, fire-hardened, bamboo spear is fastened, is held back at high tension, leaving a narrow space (about 24"—26") just wide enough to permit the passage of a pig; across this space is suspended a fine fibre, which when displaced by a few inches trips a trigger, and releases the spear (Plate 13). The setting of a *peti* involves very careful measurement, for it is so designed that the spear will strike the pig (*babi:* Sus barbatus) in its most vital part. These *peti* are scattered along the edge of a farm, and especially in those places where pig tracks have been detected. Because of the danger to wandering humans, warning signs (consisting of a cross-stick in a notched upright) are usually erected, but it is always necessary to move with caution when approaching an Iban farm, by other than the main paths. Not infrequently mock traps and signs are also erected, further to alarm and confuse the pigs. The *bubong* is a large box-shaped trap, built of stout poles or logs, and baited with cucumbers, pawpaws and the like; dislodgement of the bait trips the trigger and causes a heavy lid to fall, cutting

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off all way of escape. These traps are placed on level ground at the edge of a farm, and are directed against the *kra* (Macaca irus) and the *nyumboh* (Macacus nemestrinus), two species of monkey, both of which raid farms to eat the *upa*, or pith of the growing *padi*, and frequently cause serious damage. The *tinya* is a spring-pole snare with a tread-board and key-stick. Although the *tinya* is chiefly employed for trapping birds (in particular, the *ruai*, or Argus pheasant), it is also sometimes set in the jungle surrounding a farm, to catch small animals such as the porcupine, which has a penchant for cucumbers and other catchcrops. All of these traps are independently set by *bilek* families, and at Rumah Nyala, most men specialized in one type, so that not once did I encounter two different kinds of trap on the same farm.

129. Other families try to protect their *padi* by erecting aeolian alarms at different points on the farm. A common type consists of a length (about 4 ft.) of mature and well-dried bamboo, its central internode left untouched, but the two ends pared away so they gradually taper to a point. Between these two points is strung a strip of bark, so that under tension the bamboo becomes bent like a bow; then, in the centre of the plaited bark, a hardwood clapper is fastened. With a sewn, palm-frond sail (about 2 ft. × 3 ft.) suspended from its base, this bow is hung from a lofty pole, and as it sways and plunges in the wind over the ripening *padi*, it gives out a resonant and cacophonous sound disturbing to wild animals.

130. These various expedients—pallisades, traces, traps and aeolian alarms—all contribute to the defence of a farm, but they are never sufficient in themselves. In January or February, when the whole crop begins to mature, more active measures have to be taken. It is then that subsidiary watch-houses are built, and brought into regular use. Some *bilek* families take up permanent residence in their *langkau umai*, and the others try to arrange that at least one of their number spends the night in guarding the *padi*. All Iban are convinced that the jungle is inhabited by spirits, and some, like the dreaded *antu gerasi*—the 'spectre huntsmen' of the forest—are believed to attack human beings, causing sickness and death. The existence of these and other perils of the night means that a woman is not prepared to stand solitary guard in a *langkau umai*, but always insists on having the company of another woman, or her older children. Because of this fear small *bilek* families are often at a disadvantage. (The failure of the crop of one *bilek* family at Rumah Nyala—No. 14—was directly attributable to the fact that the only female worker, a girl of about 15 years, was afraid to visit the farm alone, and as a result it was very inadequately weeded and guarded). Men, on the other hand, do keep solitary watch, and regularly patrol their farms at night. To-day, 12-bore shot-guns are coming into general use (in January, 1950, 14 of the 25 *bilek* families of Rumah Nyala possessed shot-guns), and these greatly aid the farmer in his task. In 1950, several of the more energetic and conscientious men of Rumah Nyala constructed rough shooting platforms at the edge of their farms, and there lay in wait, night after night, during February and March. Deer, pigs, monkeys and a bear were among the animals shot in this way. Men not possessing guns patrol their farms once or more during the night armed with a long-handled, hunting spear (*sangkoh*) and a bush-knife (*duku*), and often accompanied by dogs.

131. Women (and old men) adopt purely defensive measures. Brass gongs (*bebendai*) are hung from the rafters of the *langkau*, and beaten at regular intervals throughout the night. Others rely on a simple xylophone, consisting of a single, straight bough (6 ft. × 6 ins. in diameter, and taken from the *lup* tree), which,

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stripped of its bark is suspended from two *rotan* loops. When struck with a hardwood mallet, this *tengkuang*, as it is called, gives a resounding note, and experts beat out a kind of menacing tatto. This is interspersed with loud whoops, shouts and cries, from the *tanju* of the *langkau*. Some families erect, at several points on the farm, large split-bamboo clappers which can be activated, from the *langkau*, by tugging on long *rotan* leads. These acoustical devices are used both by day and night. As a further defence—when the need arises—bonfires are lit along the edges of a farm.

132. Insect pests are an even more difficult problem. Against such things as the rice stem-borer and the rice bug, the Iban have no defence other than magical potions which they scatter over the growing *padi*. To cope with larger insects—locusts, crickets and grass-hoppers—magical contrivances are similarly used, but these are supplemented by active collecting—mostly on the part of women and children. The opportune time is in the early dawn, when the insects are to be found sleeping on the *padi* stalks. For the Iban there is the added incentive that certain types of locust are looked upon as a relish, and impaled upon reeds they are carried back to the farm-hut to be roasted over an open fire.

133. It is during the critical few weeks just before and after reaping begins, that these precautionary measures reach a climax. At nights the *dampa* in the valleys are inhabited only by the aged and decrepit, by the sick, by nursing mothers and young children, for all the able-bodied members of the family are away in the *langkau umai*. It is not an unpleasant duty, for the promise of the harvest is close at hand, and everyone is eager to guard grain grown with such toil and trouble. It is a time of tension and anticipation, and throughout the night the sonorous cadences of gongs, and the hue and cry of shrill female and harsh male voices can be heard echoing around the hill tops, which, here and there are lit by the flicker and glow of fires.

134. The need for all these safeguards is very real, for despite the many precautions taken few farms remain unscathed, and neglectful and lazy families sometimes suffer severe loss. At Rumah Nyala, pigs and monkeys were the most intractable of all the animal pests. Particularly audacious were the pig-tailed monkeys (Macacus nemestrinus); on several occasions I saw them approach to within about half a furlong of a *langkau* where gossiping Iban were plainly visible, there to cram succulent young heads of maize into their cheek pouches. At Rumah Nyala (as elsewhere in the Baleh), I did not however, ever encounter cases of what could be called really serious damage, although I was always on the look-out for them. The worst incident which I did see was about a square pole of *padi* trampled down and partly devoured by wild pigs. This would represent a loss of not more than two or three gallons of grain, but under the conditions of scarcity which characterize the subsistence economy of the Iban, even such small losses are keenly felt.

135. Here, a word of warning may not be out of place. For the Iban *padi* is a major interest, and at harvest time the hazards of farming are a favourite topic of conversation. Among themselves the Iban are greatly given to hyperbole, so that the complaint: "*Ambis padi aku laban babi*" ("All of my *padi* has been destroyed by pigs"), means that a patch a few square yards in area has been trodden down. The Iban love to expatiate on their tribulations—rather as do the English about the weather—and in public discussion each man strives to give as poor a picture as possible of his own *padi*, and to magnify the difficulties he is

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experiencing. These conventional exaggerations stem partly from an idea which pervades much of Iban thought, the notion that to dwell on the good qualities of a thing (e.g. the *padi* crop, in this case), is to tempt providence and to cause it to turn out to be the very reverse; and partly from a desire to conceal the existence of a good crop from other *bilek* families, and so be in a better bargaining position after the harvest. Again, inefficient farmers exaggerate the depredations of animals to cover up their own failures, and enlarge upon the paucity of their crop in order to excite the sympathy of those with a surplus. The Iban themselves well understand these conventions, but a European, unacquainted with Iban ways, is apt to be grossly misled by their hyperbole. This is not to say, of course, that serious damage never occurs. Because of death, sickness or some other mishap, it sometimes happens that a family is unable to guard its farm during the critical days preceding the harvest, and then wild animals wreak havoc on the almost ripe *padi*, and may cause the loss of many bushels of grain. The guarding of a farm just before and at the time of harvest is certainly a most vital phase in the cultivation of hill *padi* in the Borneo jungle.

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The Harvest

136. We have already noted that the first seed to be planted is that of quick-ripening rices, known as *padi muda*. Ten strains of *padi muda*, cultivated by ten different *bilek* families of Rumah Nyala, had maturation periods varying from about 143 to 155 days, with an average of about 150 days. These *padi muda* are always the first to be reaped, for they are ready a fortnight or more before the main crop, or *padi taun*. If it happens that the previous season has been a bad one, many *bilek* families will have by this time exhausted their own stocks of *padi* and be living on rice purchased from other Iban or from Chinese traders; or, if rice be unavailable, upon that much disliked scarcity food: sago. Before dibbling begins an Iban family has a rough idea of how long its stocks of grain will last, and if it is judged that they are likely to be exhausted before the next harvest begins, it is usual to sow a larger area than usual of *padi muda*, and to begin eating it at the earliest possible juncture. It is customary indeed, for the harvest to begin before the *padi* is properly ripe. This premature reaping, for which there is a special term: *numa*, v.f. *nyuma*, is a widely prevalent practice, for although it is usually prompted by scarcity, *bilek* families still well provisioned from the previous year cannot resist the pleasure of tasting at least a little of the new season's *padi*.

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137. As the long tended *padi* reaches maturity (Plate 12), the temper of the community changes, for this is the best time of the whole year: for everyone, there is sweet-smelling new rice in plenty, and an abundance of catch-crops from which appetising relishes can be made. Past privations are forgotten and everywhere there is a spirit of elation and eager anticipation. The commencement of *nyuma* (or premature reaping) is marked by a minor ritual known as *mata padi*. A clump of *padi muda* is selected, and cotton, which has been dyed red, threaded betwixt and between the stalks, which are then encircled with a brass bangle; in the centre of the clump an offering (*piring*) is placed, omen-sticks (*kayu burong*) are thrust into the ground beside it, a sacrificial rite performed and prayers uttered. The general purpose is to consecrate the undertaking and to ensure that the spirits of the *padi* are not frightened away. This done, the reaping begins, but the reaping basket is merely slung from the shoulder, or held under one arm in recognition that this is not the beginning of the harvest proper. On the first occasion only one basketful of panicles is taken, and an immediate return made

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to the *dampa*. The women participating in *nyuma* move about amidst the clumps of *padi* selecting the most mature panicles they can find, but at such an early stage none of the heads is fully ripe. While the grains at the tip of the panicle have hardened, those at the base are still slightly soft, so that if they are squeezed a milky fluid (termed *ai tusi'* by the Iban) is expressed. Because of this the *padi* cannot be threshed in the normal way by treading; instead the grain is scraped (*ngerih*) from the panicles by hand with a bamboo 'knife'. This done, the grain is placed in a cooking pot, and boiled until the swollen kernels split open the still green husks. Next the grain is laid out on mats in the heat of the mid-day sun, and when dry, pounded in the usual way with a pestle and mortar. This whole process, from scraping to pounding, takes about four or five hours, and the rice (*brau*) is then ready for its final cooking. To quote a typical case, the reaping and *mata padi* rites took place at 0800 hours, the grain was prepared between 1100 hours and 1530 hours, and the first eating began at 1900 hours.

138. The first eating of the new rice, on the evening of the day upon which it is reaped, is a ritual occasion. Each *bilek* family possesses as part of its hereditary property, a special plate (*pinggai asi*) which is used only during certain rituals. For example, the first meal of a spouse on entry to a new *bilek* family is taken from this plate; it is also used in the first eating of the new season's rice. When all the members of the *bilek* family have assembled, the *pinggai asi*, piled up with rice, is carried to the centre of the room, and placed on top of a *nendak* omen-stick obtained the same morning. A prayer, in consecration, is uttered, and then a small portion of the rice rubbed on the hearth stones, to 'feed' them, and make propitious the cooking arrangements during the ensuing year. Next a share is put out for the dogs—a safeguard this, for it is believed that any deleterious influences which may have become associated with the *padi*, because of bad omens and the like encountered during the period of its cultivation, will thus be visited upon the dogs. Only when the dogs have eaten do the members of the family help themselves (in order of seniority) from the *pinggai asi*, and begin their meal. On the various occasions when I attended these *makai padi baru* rituals, I was always asked to eat first, so that the wealth and other qualities associated with Europeans by the Iban, might in some part come into the possession of the *bilek* family concerned—and a prayer, aimed at bringing this about was always said. The first eating is a jubilant and light-hearted event, and quite often, young men return from tapping rubber, hunting, or some other work especially to participate. The fresh, young rice does have a most delicious tang about it, and is eaten with much smacking of the lips, and such appreciative asides as: "*Manis amat!*" ("Truly sweet!"), and "*Nyamai amat d'empa!*" ("Pleasant indeed to eat!").

139. At Rumah Nyala in 1950, *nyuma* began on 10th February (about 143 days after sowing), and most of the other *bilek* families held their rituals during the following week. All but one of the 25 *bilek* families of the community performed *nyuma*. If a family still has stocks of *padi* from the previous year, *nyuma* is only done once or twice, but those families which have exhausted their supplies tend to continue with this premature reaping rather than purchase *padi* from others. At Rumah Nyala, one or two improvident *bilek* families reaped immature *padi* in large quantities. This is an unsound practice economically, for when *padi* is reaped before it is properly mature a percentage of grain from each panicle is, in fact, lost. The custom of *nyuma* thus helps to initiate (or to perpetuate) a vicious cycle, for excessive 'premature reaping' accelerates the exhaustion of a

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family's crop, and this increases the likelihood of excessive indulgence in *nyuma* during the following year, and so on. In contrast, a family with sufficient *padi* reserves to enable it to dispense with premature reaping is strengthening its position, and increasing the probability of a surplus.

The Nganjong ka Penyadai Ritual

140. Once the *mata ka padi* ritual has been performed, the reaping of *padi muda* (quick-ripening rices) and *padi pulut* (glutinous rices) is embarked upon as soon as they are judged to be in a sufficiently mature state. The commencement of the main harvest (i.e. of the *padi taun*) is signalized by an important ritual known as *nganjong ka penyadai*. A *penyadai* is a small plaited mat, or a piece of bark-cloth, usually about four feet square, which is placed in the centre of the growing *padi* as a resting place both for reaping baskets (*sintong*) and the larger containers (*lanji*) in which the panicles are carried back to the long-house (or *dampa*) for threshing. This mat does have the practical use that it catches any *padi* that is accidently spilt while being transferred from *sintong* to *lanji*, but its principal purpose is a ritual one. We have noted the attitude of extreme deference and respect which the Iban have towards their *padi*, and the *penyadai* is primarily a precinct or sanctum where the souls of the *padi* can foregather. The ritual begins with the burial of an offering (*piring*) for the spirits of the earth. The panicles of the nearby clumps of *padi* are then plucked, and the stalks bent over several times and pressed down onto the ground; one clump has a brass bangle placed about it and is then tied in a knot. At the same time an incantation is uttered aimed at immobilizing the soul of the *padi*, and so preventing it from wandering from the farm in question. On the top of these imprisoned clumps the mat or piece of bark-cloth is laid down, and pegged in place with omen-sticks. Further offerings are performed, and all the other *padi* spirits are invited to make use of the *penyadai*, and entreated to assemble there in due course (Plate 20). This part of the ritual complete, the women prepare a magical potion from a variety of hereditary charms, and scatter the fluid over the growing *padi* with the injunction that the crop be made easy to reap and prove to be an abundant one.

141. Following this inaugural ceremony only a few baskets of *padi* are gathered, and on the next day no-one goes to the farm—as a safeguard against bad omens, and a pause to let the magic take effect. On the third day the site is re-visited, and the *penyadai* is 'fed' (*nyape*) by having a small quantity of cooked rice (*asi*) smeared upon it. Thereafter, the normal routine of harvesting continues, but each morning one of the reapers goes first to the *penyadai* to 'feed' it, until it is finally moved for the reaping of the *padi pun*, or sacred rice.

Iban Methods of Reaping

142. With the Iban, reaping a farm is a slow and protracted operation, for each panicle is plucked separately by hand. On rare occasions (at rituals, for example) women sometimes gather in the *padi* with their bare fingers, but the stems are too tough for this to become a regular practice, and in ordinary day to day reaping a small hand-knife, or *ketap* is used. A *ketap* (they are specially forged by Iban men for their womenfolk) consists of a thin blade of iron, with a base of about 2½ inches curving in from each end to a cutting edge of some 2 inches in length, the width of the blade being about 1½ inches. This blade is set firmly in the centre of a piece of bamboo (3 ins. long × ½ in. diameter), and held in place by a primitive cotter-pin fashioned from a piece of wire. In reaping, the bamboo handle is held upright in the palm of the hand, with the blade protruding slightly

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X243 412 from between the second and third fingers; the stem of the *padi* plant is grasped between the two upper fingers and the thumb a short distance below the lowest node of the panicle, then, by exerting slight tension and sudden pressure with the fingers, the stem is severed (Figure 5).

Figure 5. The Iban method of reaping *padi* with a *ketap*

X243 461 143. Each panicle is plucked separately, but with great speed, for in reaping, as in sowing, Iban women are remarkably dextrous. On one occasion, for example, I timed a woman to pluck 40 panicles in 30 seconds, but this was in prolific and upstanding *padi*. When the crop is sparse and irregularly developed, nothing like this exceptional speed can be attained, and at the other extreme was a woman who plucked only 18 panicles in half-a-minute. The normal working rate is about 50 panicles per minute. (From 20 different measurements the mean was 52 panicles per minute). Because the quality of crops varies so widely it is difficult to give a general figure for the time taken to reap one acre. At Rumah Nyala, however, I was able to take careful measurements for a test plot, 1/180th of an acre in extent. The *padi* on this plot was of superior quality, representing a yield of about 42 bushels per acre, after winnowing. The plot was reaped by two women on the morning of 24th April, 1950 (Plate 16), and the task took 28 minutes and 15 seconds to complete. There were no pauses. At this rate it would take one woman about 169½ hours to reap an acre; or, if one allows 10 hours work per day, it would take one woman some 17 days to reap one acre of padi of this high quality. This, and other evidence, leads me to a general estimate, for reaping, of 14-20 woman-days per acre.

X243 774 144. Men, who sometimes participate in reaping also use the *ketap*, but rarely with the speed and skill of a woman. There can be little doubt that the reaping rate would be accelerated if sickles were used, and both sexes joined in the harvest, but such a method is ruled out because of the reverential attitude which the Iban adopt towards their *padi*. In reaping with the *ketap*, the *padi* is taken,

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as it were, unawares and with a minimum of shock or disturbance, and it is believed that if more drastic and unceremonious methods were introduced the *padi* spirit would be likely to flee to other farms, and that as a result, the crop would be a poor one. We shall encounter another manifestation of this attitude when discussing the Iban method of threshing.

145. In reaping then, a woman moves from clump to clump of *padi*, gathering in the panicles one by one, and tossing them, at intervals, into a wide-mouthed, squat basket (*sintong*), which is worn in front of her body and held in place by a waist-band of bark-cloth. A *sintong* (about 11 inches in diameter by 9 inches in depth) is strongly plaited from split *rotan* canes, and attached to the side worn next to the body are two small arches of cane. The waist-band of bark-cloth is always in the form of a loop, the ends being securely tied to one of the cane arches and the loop left free. When the *sintong* is put on, the loop end is passed around the back of the body and then thrust through the other cane arch, and held in place by a wooden toggle. It is thus possible to remove the basket quite easily as soon as it is full. In passing, it may be noted that should the waist-band of a *singtong* snap or give away during the course of reaping, this is viewed as a bad omen, and work—for that day—is immediately terminated. As soon as she has filled her *sintong* a woman takes it to the *penyadai*, where she empties it into a *lanji* (a large carrying basket), or she may return to the *langhau umai* (farm hut) and empty the *padi* onto a large *rotan* mat (*bidai*) in which, at nights, it is securely wrapped.

The Carrying In of the Padi

146. When sufficient *padi* has been accumulated it is carried back to the *dampa* by men of the family (Plate 17). For this purpose special carrying baskets, called *lanji*, are used. Made by males from split *rotan* canes, and measuring about 15 inches in diameter by up to 3 feet in depth, they have strong carrying straps of bark-cloth, and a head-band of the same material. Into these *lanji* the panicles are pressed down tightly, and when the basket is full, a further bundle—wrapped in bark-cloth—is often lashed on top. Many of the loaded *lanji* which I examined weighed 100 lbs.-120 lbs. and more. Carrying these heavy loads for a mile or two along rough tracks strewn with fallen trees, and down steep and slippery hill-sides is no light task, but it is one in which young men take a peculiar pride. The ability to carry heavy loads across broken country is admired by the Iban as a leading masculine attribute. Of one who excels at this pursuit it is said that he is "truly strong" ("*kring amat*")—a tribute which will bring a flush of pride to any young Iban's cheeks; and for outstanding performers a laudatory phrase or nickname (*julok*) is sometimes coined. Majin, a former member of Rumah Nyala, was given the *julok* of "*Kapal tanah*", or "Steamship of the Land"; and although, in 1950 Majin had been dead for five years, I was frequently told of his prowess. During the harvest young men regularly return to assist in the operation of *berangkut padi*, as this carrying in of the crop for threshing is called. With florid faces, suffused with sweat and strain, they climb to their *dampa* and, with a nonchalant air—that asserts how much heavier a load they could have managed if only they wanted to—drop their *lanji* before the waiting women and girls.

147. The first carrying in of the *padi* for threshing commonly takes place about three weeks to a month after the commencement of reaping, and it is marked by a special ritual (called *ngalu ka padi*), in which the *padi* is welcomed

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to its future home—the place where it is to be stored. The first man bearing a *lanji*, is greeted at the top of the entry ladder by a woman clad in an ikat skirt (a gesture this in honour of the *padi*), and bearing a fresh egg and a bowl of *tuak* (rice beer). The egg is waved over the man and his *lanji* of *padi* in consecration and welcome. (Normally a fowl is used, but in this case the use of a fowl is interdicted, as its power of flight is symbolical of the possible 'flight' of the *padi* spirits, in response to the persistent invitations of other *bilek* families). *Tuak* is offered, a libation poured, and then the *padi* is carried onto the *ruai* of the *bilek* family concerned. On the *ruai* an offering (*piring*) is performed, and after the *lanji* have been emptied onto a large mat (*bidai*), the *piring* is placed amid the golden panicles, and a prayer is said in which the *padi* is welcomed to its home and entreated to miraculously increase quantity. To conclude, a brass gong is placed over the *piring*, and together with the *padi* it is securely enfolded in the *bidai*. *Bidai*, a type of mat especially designed for handling *padi*, are woven, by men, on an upright loom from split *rotan* canes and strips of bark-cloth. They are thus extremely strong and yet very flexible. A *bidai* of average size measures about 12 ft. by 15 ft.; *padi* is enfolded within it, and the over-lapping ends of the *bidai* are then weighed down with small logs of wood. By this method the panicles are completely protected from rats and other animals, and at the same time the *bidai* can be very easily opened up to add more *padi*.

148. The ritual (*ngalu ka padi*) just mentioned is an important one is the estimation of the Iban, for they are persuaded that *padi* can miraculously increase or decrease in quantity after it has been reaped, just as it can in the fields. The operative belief here is that the *padi* has a spirit, and that the departure of this spirit may result in diminution of grain itself. This belief is sustained by the *padi* cult in general, by myths and by dreams, but the Iban do point to the fact that after threshing and winnowing, the *padi* (i.e. originally stored in panicle form) of different *bilek* families behaves in very different ways. Whereas in some cases there is a normal and expected decrease in quantity, in other cases the loss is much more marked. This, of course, does happen, for the *padi* of different farms is subjected to vefy diverse conditions, and widely varying degrees of infestation by insect pests; but this is not the explanation of the Iban. Their theory is a mystical one, and consequently they expend much time and trouble in pouring libations, presenting offerings and in casting magical potions over the panicles before they are enfolded in a *bidai*, which has been ritually fed (*nyapa*) to ensure that it will not devour any of the *padi* it is designed to protect.

Threshing

149. The threshing (*tungko*, v.f. *mungko*) of the *padi* begins on the day following the *ngalu ka padi* ritual, or at any time thereafter which meets the convenience of the *bilek* family concerned. It normally takes place on the *ruai*, and both men and women participate. The *bidai* containing the panicles is opened out and surrounded with additional mats to avert any danger of grain falling beneath the house. To the low rafters of the *sadau* (loft), long strips of supple bark-cloth are tied. A man then takes a small stack of *padi* (usually about a bushel or so) from the main heap, and grasping a loose bark-cloth strap in each hand to gain support and purchase, he commences to tread the panicles (*tangkai*). The action is a vigorous one, the outer panicles being forced down on to the mat and kneaded with the bare soles of the feet. Then they are gathered up again with the instep and inner surface of the foot and ankle, to be trampled once more. In this

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way the grain (still in the hull, of course) is gradually separated from the branches of the panicles. The first treading of a bushel of panicles takes about seven to nine minutes—the time varying with the degree of ripeness at reaping. After this first treading the panicles are pushed away to one side, for the next process, called *ngeruman*, which is normally women's work. The panicles (now called *ruman*) are lifted in small bundles by a squatting woman, shaken, and sifted through with the fingers of both hands, to free any loose grains which may still be present. Then they are tossed onto a separate pile to be trodden a second time. Another way of doing *ngeruman* is with a device known as a *lantai panggau*. This *lantai panggau* is a large grille (about 6 ft. × 3 ft.), made from intertwined strips of split *rotan*; it is fastened to a wooden frame and then suspended at about waist height. Bundles of trodden panicles are thrown onto this grille, and then shaken and churned up with the hands, so that the grain falls through the fine mesh, leaving the worthless straw behind. If a *lantai panggau* is used a second treading is not always necessary.

150. Threshing, particularly if young people are participating, is a light-hearted occasion. As the men vie with one another, each swaying like a dancer over his stack of *padi*, there is a steady stream of banter and gossip; and, when the workers pause to smoke, chew betal and eat cucumbers, riddles are posed, guessed at and laughed over. Threshing is strenuous work, and while they are at it the almost naked bodies of the young men glisten with perspiration; but it is work that is soon over, for *padi* which has taken three weeks and more to harvest can be threshed in one day. On 23rd March, 1950, for example, I watched threshing by the *bilek* family of Kubu (No. 21), of Rumah Nyala. The treading (*nungko*) was done by Kubu's son-in-law, aged 32, and by his son of about 13 years; while Kubu and his daughter, aged 28, attended to the task of sifting (*ngeruman*). They were threshing a large *bidai* full of panicles—all the *padi* which had been reaped during the previous 20 days. The work began soon after eight o'clock in the morning and continued (though with frequent brief pauses) until two o'clock in the afternoon; when all the grain that had been threshed out—about 38 bushels of it—was packed carefully away in another *bidai*.

151. In discussing threshing with the Iban I often asked why it was that they did not adopt the more speedy method of using flails. Almost all Iban men are familiar with this technique having seen it, when on their travels, being followed by Chinese and others. Their reply was always the same: "We Iban simply dare not (*enda kempang*) strike our *padi*, for if we did so the *padi* spirits (*antu padi*) would take offence, and, in anger, desert us". This, it was explained, would result in an actual lessening of the harvest; in use the *padi* would soon become exhausted (*padi rua*); and the crops of future years would be scant and poor. Again, it is ritually forbidden (*mali*) to tread on the *padi* after it has been threshed, and is waiting to be stored away in its *bidai*. The sanction is the same; as one man put it, the *padi* must not be trodden on "lest the *padi* spirits decline to be cared for by us" ("*Enggai ka antu padi enggai di impun kitai*"). It is important to note that here, as with so many Iban taboos, it is the intention of the perpetrator that matters. If in the course of threshing, a man finds it necessary to tread on the *padi* this causes no offence—the *padi* will understand, it is said; but to walk over the *padi* after it has been threshed is a wilful act, expressing disrespect of which the *padi* spirit is keenly conscious.

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The Completion of the Harvest

152. After the first threshing has been completed the task of reaping is resumed. The main brunt of this work falls upon the women, though it is usual for men of about 35 years of age and over who are actively managing a farm to offer regular assistance. A man's participation in reaping usually precedes, by a few years, his participation in weeding. Indeed, if the crop be a heavy one, a man is often obliged to devote much of his time to reaping, and to call in outside help —if he does not want to see his *padi* wasting in the fields. In harvesting, the labour-exchange (*bedurok*) system is seldom followed. A special feature of Iban life is the wide variation in heaviness of crop from *bilek* family to *bilek* family—within the same community. This situation mainly arises from the fact that so many different types of land are being used (i.e. tracts of land which have been subjected to very different kinds of usage), but also from the differential size and efficiency of labour teams, and such chance factors as the burn, depredation by animals, and the like. It is usual for a *bilek* family with an unusually heavy crop to utilize the labour of less successful families, as soon as their own *padi* has been harvested. Under these circumstances, wages (*gaji*) are always paid—though rarely in the form of cash. The exact nature of the *gaji* paid is a matter for arrangement between the two parties. In 1950, the standard rate of pay was one gallon of Iban *padi* (market price about $1) per head per day, and the provision of a mid-day meal.

153. As already described, the course of reaping follows closely the order in which the farm was sown. Most farms contain ten to fifteen different kinds of *padi*; in reaping, each of these sections is gathered in before passing on to the next, and in each section the senior woman of the family has the responsibility of selecting seed for the coming year. In reaping, it is a ritual requirement of vital importance that there should be no break in continuity, lest the *padi* spirits, which are believed to be following the reaper, should miss their way and become lost. Thus, when a woman finds it necessary to move from one part of a section to another, she plucks a line of panicles as she walks, calling upon the *padi* spirits to follow her. When a track cutting across the farm is encountered, a special ritual has to be performed. Here the chief danger is that the path has been traversed by other Iban, who were carrying objects ritually contaminating to the *padi* spirits of the farm in question. Among the Iban every family's *padi pun* has associated with it a series of ritual prohibitions (*pemali*). A common taboo is that against the flesh, or any other part of a pig, coming in contact with the *padi*. Anyone who has eaten pork, or touched a pig, may not, on that day, enter any part of the farm concerned; and breaking of this rule involves a heavy penalty. These *pemali* do not, however, refer to public tracks crossing a farm; only if someone leaves the well-defined track to walk through the growing *padi* is an offence committed. It will be seen from this that a public track is ritually polluted, and a barrier in the path of the *padi* spirits. It becomes necessary therefore, to bridge this barrier, and with due care to conduct the *padi* spirits to the next section of the farm. Each reaper performs an offering (*piring*), recites a prayer over it: "This offering is to consecrate the crossing of this track, to sweep away utterly all things that threaten and taint", and then steps over the track to continue with the harvest, safe in the knowledge that the *padi* spirits have not been left behind.

The Reaping of the Padi Pun

154. So the harvest continues until the reapers finally converge on that part of

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154. The harvest continues until the reapers finally converge on that part of the farm where the sacred rices—the *padi sangking* and *padi pun*—are growing. Here the ritual of reaping reaches its climax. When the various *padi sangking* have been harvested and carefully placed in separate piles, all of the reapers forgather at the small plot of *padi pun*. With full ceremony, an offering (*piring*) containing eight eggs and all the other standard ingredients is performed; an egg is pierced and its contents wiped sacrificially on the *piring*; then, standing amid the *padi pun* the person conducting the ritual (usually it is the senior man of the *bilek* family), intones a long prayer summoning all the *padi* spirits to return and accompany the reapers back to their rightful abode. Circumspectly the sacrosanct *padi pun* is plucked panicle by panicle, placed in a reaping basket with its *piring*, and covered with a piece of bark-cloth. In most cases the return to the *dampa* is made without delay.[1] With the reaping basket slung over her shoulder, the bearer scatters behind her a trail of puffed rice (*rendai*) and as she makes her way homeward calls to the *padi* spirits—entreating and enticing them to accompany her:

243 784 774 778

"Oh *padi* spirits, come follow, come follow, come all of you follow! Let this rice be the pathway you tread, the ladder you climb on returning. Oh do not digress or dally down by-ways! Come all of you follow! Come all of you follow!"

On arrival at the *dampa*, the entry of the bearer is celebrated with special ceremony. An ikat fabric (*pua kumbo*) is draped over the reaping basket, and over the *padi pun* a cock is waved in greeting and blessing; libations are poured and the *padi pun* carried to the *ruai* where an offering (a *piring*, with eight eggs) is laid out in readiness on a finely woven mat. When the offering has been made and the blood of a cock wiped on the reaping basket, a further prayer—in welcome and consecration—is uttered, and the *padi pun* is carefully put to one side to be prepared for final storing (*simpan*).

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[1]There are a number of different kinds of ritual associated with the reaping of *padi pun*, and all of these I hope to discuss in future publications. It may be of interest, however, to quote the *sampi* which I recorded on 5th May, 1950, at Rumah Nyala, when Kubu (of *bilek* family No. 21) summoned the *padi* spirits during the rites of reaping his *padi pun*. Standing amid his sacred *padi* he called to the *padi* spirits in these words:

"Hoy! Hoy! Hoy!
I call, I command,
I whistle, I bid you assemble,
I beckon, I summon you all;
I bring to you offerings, overflowing and full,
Offerings unstinted and ample.
From up river and down, from across and around:
Where are you? Where are you?
Come gather, come muster,
Come throng and come cluster.
Let those who are blind be led by the hand,
And let all be carried, who are crippled or lame.
All boys, all girls,
All fathers, all mothers,
All grandsires, all grandams,
All kith and kin of family and of tribe!
Wherever you are: be you fishing with rod, or with net, or with poisoned root;
Be you hunting, or setting your traps.
Come back! Come back!
To sleeping-place, to dwelling-place,
To fireside, and to mat;
To the bark-bin, your nest, your haven, your home.
Oh, all of you, all of you:
Come leap on the basket I bear on my back!
Come one, come all,
Let none be left behind.
Come all of you! Come all of you!"

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Winnowing

155. In due course the remainder of the crop is threshed, and then, on a fine and settled day, the operation of winnowing is embarked upon. Mats (*tikai singang*) are laid down over the entire extent of the family *tanju* (open platform of *dampa* or long-house); the *bidai* is opened up and the *padi* transferred to a series of *baka*. A *baka* is a large, circular basket, plaited from split *rotan* canes, and especially designed for the handling of grain; they vary in capacity from about five to nine gallons, the standard size being a *baka* of one bushel, or *pasu*. When a *baka* has been filled it is hoisted on to the head, and carried out to the *tanju* where the winnowers are waiting. Leaning slightly forward the bearer tilts her basket and lets the *padi* pour in a steady stream on to the mats below. As soon as the *padi* begins to fall the women (either one, two or three of them), who are armed with winnowing-trays (*chapan*), wave these rapidly up and down creating a strong draught that drives to one side any empty husks (*ampa*), while those containing kernels drop to the mat beneath (Plate 18). (The term for pouring out the *padi* is *berayar*, while the fanning action is known as *puput*, v.f. *muput*). Gradually a heap of sound *padi* is formed. At intervals the refuse is gathered up and winnowed a second time by hand; i.e. actually in the winnowing tray (*chapan*). In this way the completely empty husks (*ampa raya*) are lost, while the partially filled husks (*ampa brat*), and the small proportion of sound *padi* which has been inadvertently included, is retained. This mixture of *ampa brat* and sound *padi* is termed *brauk*, and is usually reserved to be pounded and eaten during the immediately following days. (Some Iban store this *brauk* away and sell it, in due course, to Chinese traders. As *padi* is sold by bulk and not by weight, the Iban gain on the transaction. They vindicate themselves by saying that such a practice is but mild retaliation for the double-dealing of the Chinese).

156. Winnowing always results in a loss in bulk, and in some cases, when for example, the *padi* has been severely attacked by the rice bug and other insects, the shrinkage is considerable. From observations made at Rumah Nyala, I would make the general estimate that loss in bulk at winnowing from about 5% to 20% in the worst cases. A careful measurement of the yield of a test plot of 1/180th of an acre, showed a loss in bulk at winnowing of about 11%, and this was *padi* classed by the Iban as being of better than average quality. In discussing yields it is important, therefore, to state clearly whether the measurement was made before or after winnowing.

157. When the winnowing is over the heap of sound *padi* is raked out on the mats and allowed to lie in the heat of the sun. This treatment is designed to improve the storing qualities of the *padi*, and it is usual for the sunning to continue for at least several days. At nights the *padi* is enfolded in mats, and protected from the elements by stout roofing made from palm fronds. The *padi* is then carried back to the *ruai* to wait for the final operation of being stored away in the huge bark-bins which each family keeps in the loft (*sadau*) of its apartment.

The Storing of the Padi

158. The final storing away (*simpan*, v.f. *besimpan*) is an event of great importance, for the Iban believe that if the correct rituals are faithfully performed their *padi* will last longer, that it will not be used up so quickly as would otherwise be the case. They believe that the supernatural qualities of fertility and increase which are the special attributes of *padi* are still present after the grain has been reaped, threshed, winnowed and stored. Everything depends on taking the

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necessary safeguards against injurious and alien influences, and in winning the esteem of the *padi* spirits by the proper rituals. It is an occasion hedged around by numerous prohibitions (*pemali*). The *ruai* is cordoned off, and while the *padi* is being handled no outsider may intervene, nor may the participants converse with one another. Offerings are meticulously made, and placed both in the main bin (*tibang*) and beside the stack of *padi* lying in its protective mat on the *ruai*. With great care the bin is fumigated, rubbed with fragrant bark and creepers,[1] anointed with fluid in which innumerable magical charms have been immersed,[2] and 'fed' with rice and *tuak* to ensure that its spirit will not molest that of the *padi*. Beside the *bidai* a dozen or more baskets (*baka*) are laid out. Then, after a final prayer of consecration, the actual handling of the *padi* begins.

159. Kneeling before the stack of grain on the *ruai* the woman in charge gently scoops it into a winnowing tray (*chapan*) with her cupped hands. The action is slow and studied, and the woman has the air of a votary handling some sacred and precious substance. This, of course, is a vital element in the ritual; the *padi* must be coaxed and charmed, and conducted to its abode with all the decorum and respect which it deserves. From the winnowing tray the *padi* is deftly poured into the waiting baskets (all of which have been 'fed' in advance), and when all are full, they are lifted up one by one to the loft (*sadau*), and tipped into the bin. At intervals two of the men pack the *padi* tightly into place by treading it down with a queer, dance-like step—shuffle, shuffle, jump—beginning at the periphery of the bin and following a spiral track until they arrive at its centre. The baskets are handed down again, and so the task continues until all of the *padi* is safely stored away. Because of the elaborate ritual, storing is a slow process, but even so, it seldom lasts for more than about half a day. The average rate of storing is about ten to twelve bushels per hour.

160. Not until all of their *padi* has been stored away are the members of a *bilek* family able to reckon with confidence the extent to which the crop is likely to meet their requirements of the coming year. A count is made of the number of baskets of *padi* (taking each as a *pasu*, or bushel) hoisted up to the loft, but the best check is had when the state of the bins is known. The same bark-bins are used year after year, and a family soon comes to know what the state of its bins means in terms of yearly consumption. (A large bin measures about 5 ft. in diameter by 3 ft. in depth; most families have one or two of these, and a number of smaller bins). Growing *padi* on hill-side clearings in the jungle is an uncertain venture; in good years there are bumper crops and grain in abundance, but the Iban are no strangers to failure and scarcity. The yearly storing always has an atmosphere of suspense about it. When the results are known, those with a deficit bemoan their lot and begin reckoning how soon it will be that they will have to set about purchasing *padi* from their kin or Chinese traders; while those with a surplus talk jubilantly of the jars, the gongs, and the other property that they will be able to buy.

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[1] As this action is performed the following *sampi* is uttered:

"Oh bark-bin, with these fragrant roots we rub you, with this oil we anoint you, with this soap we cleanse you; to rid you of all things improper, of all things defective.
Oh let all things evil and untoward, flee from hence and be utterly gone!"

[2] The accompanying *sampi* is:

"To accompany the storing away of our *padi*, we use these charms that make return and comfort certain;
Oh bark-bin, may you become full to overflowing.
Within you may our *padi* procreate and become plenteous".

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

Part IV

THE ECONOMICS OF AGRICULTURE

Introduction

592 161. We have singled out the autonomy of the *bilek* family as a fundamental feature of Iban economic organization. Let us now examine this proposition in greater detail, devoting our attention, in particular, to the economics of *padi* cultivation. We have seen that the Iban *bilek* family is an allodial group, possessing land and property in its own right. It is likewise an independent entity economically, for each *bilek* family manages its own farm (*umai*), producing as best it can the *padi* and other crops which it needs for its own subsistence. In agricultural matters, there is, among the Iban, an absence of any kind of communal ownership, production or consumption—a state of affairs entirely consistent with the principles of social structure enunciated in the first part of this report. Individualism is one of the salient values of Iban society, and in economic pursuits it is competition rather than co-operation which motivates *bilek* families.

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The Organization of Labour

592 162. The *bilek* family, we have noted, is a small group numerically and a
162 simple one genealogically. Both of these features have an important bearing on economic organization. The simple structure of the *bilek* family, arising from the fact that it is based essentially on the elementary family, means that among its members there is congruence of interest to a marked degree. The prevalence of partition, whereby large *bilek* families break up into autonomous units, precludes the existence of extended families; and only about 7% of *bilek* families contain married siblings, i.e. who are living as members of the same household. This means that in the great majority of cases a man is working for his own immediate family, and the same, of course, applies to women. Further, the simplicity in structure of the *bilek* family has as a concomitant, smallness in size. About 80% of Iban *bilek* families fall within the range of from two to seven members per family, and households of more than ten members are very rare, occurring in only about 2% of cases. Here clearly, we are faced with factors of profound importance in economic organization. Let us then examine the situation more closely, taking Rumah Nyala as an example.

592 163. In May, 1950, there were in Rumah Nyala, 25 *bilek* families[1] with a total
162 membership of 140 persons of all ages. About 66% were adults (i.e. 15 years of
464 age and over), while 34% were children. Of the adults, 41 were males and 52 females; and of the children, 30 were boys and 17 girls. In size the 25 *bilek* families ranged from 3 to 10 members; with a mean of 5·6, a median of 5, and a mode of 3 persons per household. Let us now turn to an analysis of the labour resources of these 25 *bilek* families, remembering that each *bilek* family is an independent unit economically. In assessing the labour force available to each *bilek* family we are interested only in those persons who were regularly engaged

[1] These 25 *bilek* families were divided into 26 farming units; c.f. Footnote 1 in p. 38.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

in *padi* cultivation during the period under review, i.e. 1949-50. But deciding whether or not a person is 'regularly engaged' in farming is, in some cases, a difficult task. Chiefly, this is because of the habit Iban men have of setting off, periodically, on *bejalai*, or journeys; so that it often happens that one of the male members of a family is absent for all or a major part of the agricultural year. In what follows I have listed as 'absent' those men who were away for all, or a major part (i.e. more than three-quarters) of the year. (When we come to discuss felling, etc., the necessary allowances will be made in an exact count of the number of men involved.) Again, there are the aged, who because they are decrepit, crippled or sick, are unable to participate in the normal activities of farming. Among the Iban the aged continue to work until they are physically incapacitated. Thus, very old men will assist in guarding a farm long after other tasks are beyond their strength; and aged women will devote their days to watching over *padi* laid out in the sun for drying, and in warding off with long bamboo poles the ever voracious domestic fowls. For our present purposes however, all those persons too old to join in the normal routine of *padi* cultivation have been excluded. On the other hand, a number of children, varying in age from 11 to 15 years, have been included in the labour teams. They are eight in all, seven being boys, and one a girl. The boys only participated to a limited extent, joining in the clearing of the undergrowth and in the felling of small trees, in dibbling—a little, and in threshing; the girl played an important part in sowing, weeding and reaping—for her *bilek* family. All children 10 years of age and under are omitted. Of the 140 members of the community, the following then are excluded:

Category	*Males*	*Females*
(*a*) Absent on journeys	9	—
(*b*) Aged and sick (inc. one male moron)	4	3
(*c*) Children 10 years of age and under	23	16
Totals:	36	19

164. This leaves a total of 85 persons who were actively engaged in all, or almost all, the routine farming tasks of their respective sexes. The dispersal of these 85 individuals in *bilek* families—and it is this with which we are essentially concerned—was as follows:

Table 5: Bilek Family Labour Teams

Number of persons in *bilek* family's labour team	2	3	4	5	7
Incidence	8	9	5	3	1

It will be observed that in the majority (i.e. 86%) of cases, the labour force available to a *bilek* family is limited to two, three or four members; and this, as we shall see, imposes severe limits on the scale of Iban economic organization. Even more significant is the *bilek* family distribution of labour in terms of sex. This is shown in the two following tables:

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Table 6: Number of Females in Bilek Family Labour Team

Number of females in *bilek* family's labour team	1	2	3
Incidence	8	13	5

Table 7: Number of Males in Bilek Family Labour Team

Number of males in *bilek* family's labour team	0	1	2	3	4
Incidence	2	16	5	2	1

As these data suggest, most *bilek* families are limited, in farming, to one or two female workers and one male.

The Custom of Bejalai

484 165. Before discussing division of labour among the Iban, let us return to a more detailed account of the important custom of *bejalai*. *Bejalai*, literally 'to walk', also means 'to go on a journey', and it is used, by the Iban, to describe the important institution of a journey undertaken for material profit and social prestige. These journeys frequently last for several years, and often extend to remote corners of the vast island of Borneo, to Malaya and the islands of the Indies, and sometimes even to New Guinea. The expeditions take many different forms. Some (lasting for not more than about three to six months) are inland to the primeval jungle—there to cut *rotan*, fell timber, or tap *jelutong*, for sale to Chinese traders. Since the war many groups of Baleh Iban have undertaken journeys to Indonesian Borneo (chiefly to the Mahakam and the Apo Kayan), trading commodity goods with the tribes there, for brass gongs and the like. But the most coveted journey of all is seawards. All manner of employments are engaged in: lumber-jacking in the forests of the deltas, tobacco farming in North Borneo, or manual labour at the oil fields of Brunei. Before the war, parties of Iban were employed in Malaya in up-country survey and forestry work; to-day they are serving as trackers with British regiments in action against Chinese communists. Every European who has lived among the Iban must have had the experience of young men pleading to be taken on that most alluring journey of all: to Ai Europa—"the rivers of Europe".

484 554 304 166. For Iban young men then (and particularly since the cessation of head-hunting), going on journeys is the greatest and most consuming interest which life has to offer. The lure of the distant sea and its fabled ports is inducement enough; but added to this are varied opportunities to earn money, and ultimately to purchase a gong, a jar or a shot-gun for one's triumphant home-coming. But the most powerful incentive of all is the very considerable social prestige which a much journeyed man can command. Iban custom prescribes that only on a *bejalai* can a man be tattooed, and so the sophisticated and widely travelled are easy to recognize for their bodies are as thickly covered with tattooing as is a globe-trotter's portmanteau with labels; and both customs have the same purpose: the advertising of achievement. Of recent years indeed, some Iban have taken to the practice of having tattooed on their bodies the names of the places they have visited. One young man of Rumah Nyala had tattooed on his forearm the proud words: "*Suda kerja di Singapora*" ("Have worked in Singapore"). Above all, it

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is only after having accomplished many successful journeys that a man begins the performance of the series of elaborate rituals (all based on the institution of head-hunting) which confer social prestige in middle and old age.

167. Participation in the expeditions of older men begins soon after a lad reaches puberty, and during the next ten to fifteen years of his life going on *bejalai* is his principal preoccupation. As far as possible he times his various excursions to fit in with certain stages of the agricultural cycle. Ideally a young man returns to his long-house in about April, assists in the threshing, joins in the festivities that follow the harvest, lends a hand in the felling of the jungle for the next season's farm, and then, towards the end of June, is ready to set off once again. Sometimes he will wait until August or September to help in dibbling. During the months of weeding, guarding and reaping (i.e. October-March) however, it is rare to find young men living in their own long-houses. Some young fellows are disdainful of almost all farm work. Lagan (aged 22 years), of Rumah Nyala, had never assisted in any task other than felling, and this only once or twice; the running of the farm was left entirely to his elderly grandparents (70 and 65 years of age), who although they frequently complained of his behaviour were quite unable to alter his ways. Ujan (aged 19 years), who had six different expeditions (*bejalai*) to his credit, contributed—during the years 1949 and 1950—eight days to felling and two to the carrying in of the *padi*, but participated in no other farm work. Such are the untrammelled existences of young, unmarried men.

168. Moreover, marriage—in itself—has little effect on the wanderlust of the Iban. When a man marries for the first time—usually in his middle twenties—he can, in most cases, rely on his father or father-in-law to continue the management of the family farm. The son, or son-in-law, will try to be present for threshing, felling and dibbling, but during the six months when the *padi* is in the ground, he is free to roam as before. Only when a young man finds himself in the position of being the senior, active male member of his *bilek* family is he forced to restrain his proclivities, and to take over himself the arduous task of managing a farm.

The Management of a Bilek Family Farm

169. In the great majority of cases a man is not obliged to take over the management of his family's farm until he is over 30 years of age, and quite often not until he is approaching the age of 40 years. At Rumah Nyala in 1950, there were 16 married men 40 years of age and under (the youngest being 24 years), and during the period 1949-50, 12 (or 75%) of them took part in at least one lengthy (i.e. 3 months—6 months) *bejalai*. Of the four who did not participate, three were men who were the only adult male member of their respective *bilek* families. Further, of the 15 married men of the community, who were over 40 years of age and responsible for the management of a farm, only three (20%) went on a *bejalai* during the same period, 1949-50. We can say then that participation in journeys away from the long-house follows a clear pattern, which is related to the ages of the men concerned and their responsibilities for the management of the farms of their respective *bilek* families. This general pattern can be observed in Table 8.[1]

[1]There have been omitted from this summary: one moron (aged 32), and one simple-minded batchelor of 37 years.

(*a*) of the 5 unmarried men, *none* was responsible for the management of a *bilek* family farm;

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Table 8: Participation in Bejalai by Men of Rumah Nyala

Age and Marital Status	*No. of Men*	*Number of these men who participated in one or more lengthy bejalai (3–6 mths.) during the years 1949–50*	*Percentage: participating in bejalai*
16–30 years; unmarried	5	5	100%
Under 40 years; married	16	12	75%
41–60 years; married	12	3	25%
Over 60 years; married	6	—	—

170. As these data suggest, the main responsibilities of farming are left to older men, while the youthful—both unmarried and married—spend a high proportion of their time in seeking wealth outside of the long-house territory. A man's absence is, of course, felt economically only by his own *bilek* family, but it is perhaps of interest to give a general indication of the prevalence of *bejalai* among the Baleh Iban. On a number of different occasions I made counts of the number of men who were absent from a particular long-house. The results of five of these surveys are listed below. I have deliberately chosen stages of the agricultural cycle during which the labour of males is at a premium.

Table 9: Prevalence of the Custom of Bejalai in the Baleh Region

Name of long-house community	*Date*	*Farming activity*	*No. of men absent on bejalai*	*Percentage of total number of males (16 yrs. and over) in the community*
R. Nyala, S. Sut	April, 1949	Threshing, etc.	10	24%
" "	Oct., 1949	Dibbling ..	9	22%
" "	June, 1950	Felling ..	7	17%
R. Tungku, S. Tiau ..	July, 1950	Felling ..	18	22%
R. Sibat, S. Melinau ..	Sept., 1950	Dibbling ..	10	20%

This Table enables us to make a general estimate that, throughout the year, about 20% of the adult male population of an Iban community is absent on some kind of journey or enterprise. It must be remembered, however, that this estimate applies to the Baleh, a pioneer region, where there has as yet been no large scale development of cash crops.

The Economic Significance of the Custom of Bejalai

171. We have stressed the fact that going on journeys is an over-ruling interest among young men, and a major element in the value system of Iban culture. It should also be emphasized that it is generally approved of, and indeed encouraged, by those who stay at home. For this there are very definite reasons. Iban culture sets especial store by certain kinds of traditional valuables, and in ceramics and

(*b*) of the 16 married men 40 years of age and under, 8 were responsible for the management of a *bilek* family farm;
(*c*) of the 12 married men between 41 and 60 years of age, *all* were responsible for the management of a *bilek* family farm;
(*d*) of the 6 men over 60 years of age, 3 were responsible for the management of a *bilek* family farm.

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brassware in particular. Almost every Iban long-house contains valuable old plates and bowls, but it is in jars (*tajau*) that most interest is taken. The collection and evaluation of these *tajau* (which are mostly of Chinese origin) is a considerable cult; there are scores of different varieties, and some of the oldest jars are believed to possess spirits (*antu*) and are regularly presented with offerings. Brassware takes the form of gongs, cannons, trays and boxes. All of these things (together with beads, ikat fabrics, silver jewellry, etc.) have value in Iban society as prestige objects; but brassware and ceramics are of particular importance as a form of property which, in emergency, can be sold or exchanged. They are, in other words, a kind of capital, and the principal way which the Iban have of investing their savings.

172. Brassware and valued jars are not produced by the Iban themselves, they have to be purchased from Chinese or Malay traders, from other Iban, or the members of neighbouring tribes. There are two main ways of obtaining them: (*a*) by producing a surplus of *padi*, and using this as a medium of exchange; or (*b*) by earning money on a *bejalai*. When men go on journeys they are expected to return home with valuables of some kind, and their social prestige is enhanced if they are regularly successful in their quests. Further, and most importantly, the property which a man does succeed in acquiring is put into the general pool of his *bilek* family's possessions, and thus becomes part of the general family estate. In other words, the *bilek* family as a whole benefits. It is for this reason that young men are encouraged to undertake journeys and to seek work. It is a common thing to hear a mother speaking proudly of the prowess and enterprise of her son, or a wife of the valued possessions which her husband has brought back from his travels.

Division of Labour

173. As we have seen, both men and women participate in the cultivation of *padi*, but as with most subsistence economies there is a well defined division of labour between the sexes. In general, those tasks requiring great strength and energy fall to the men, while the women are responsible for work that is more onerous and time devouring but well within their physical capacities. Again, the division of labour is so arranged that most of the essentially male jobs (e.g. slashing, felling and dibbling) fall within a span of about three or four months (i.e. June—September), leaving the rest of the year free for all those men not actually responsible for the managing of a farm. The presence of at least one man throughout the *padi* cycle, to build a *langkau*, fences and traps, to guard the farm at nights, to carry in and thresh the crop, is virtually essential if a farm is to succeed. Most *bilek* families function on this basis. In 1949-50, for example, only five (or 19%) of the 26 farming units of Rumah Nyala had more than one adult male present throughout the whole agricultural year, and none had more than two. Five *bilek* families had one man, and two families two men, absent on journeys for the greater part, if not the whole of the year. Women, on the other hand, do not travel away from the long-house, except to visit in neighbouring communities (usually during the lull that follows the harvest), or to make occasional brief visits to the nearest Chinese bazaar. At Rumah Nyala there were several women who had not been to Kapit bazaar (less than half a day's journey away) for ten and more years. Of the 52 women at Rumah Nyala, only two had been further afield (i.e. down river) than Kapit.

174. Among the Iban the women are much more conservative than the men,

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174. Among the Iban the women are much more conservative than the men, for their lack of contact with the non-Iban world causes them to cling to customary usages more tenaciously than do the widely travelled and more sophisticated men. Moreover, because of the unilateral structure of the Iban *bilek* family, women exercise considerable influence, and this is undoubtedly a factor of major importance in producing the marked stability of culture and social custom which characterizes Iban tribes of the interior.

175. All Iban women, with the exception of those incapacitated by old age or sickness, participate year by year in the arduous routine of farm work. While the young men gad off on their journeys, their sisters stay at home to sow, weed and reap. It is upon the women of a *bilek* family that the main effort of *padi* cultivation falls, and in particular, the responsibility of selecting, processing and storing seed; deciding upon the planting order of the farm; and looking after the charms (*pengaroh*) and magical plants (*sengkenyang*) associated with *padi* rituals. In many families the women have a much firmer grasp of the traditional rites of sowing and reaping than do the men. This state of affairs is largely the outcome of the custom of *bejalai*, for not until he is about 35 years of age does the average man settle down to managing a farm, by which time his wife, even if she is five years his junior, has about fifteen years' experience of the routine of *padi* cultivation. At Rumah Nyala, on 6th March, 1950, I attended the *nganjong ka penyadai* ritual (cf. Para. 140) of Dumo's *bilek* family (No. 2). Among those present was Dumo's son Ngi, aged 34 years and newly responsible for running the farm; it was the first time he had ever witnessed this important harvesting rite.

176. In general, the division of labour between the sexes is as follows:

Table 10: Division of Labour

Males		Females	
Main Routine of Padi Cultivation			
nebas ..	slashing of undergrowth	*nebas* ..	slashing of undergrowth
nebang ..	felling of the jungle		
ngeredak ..	cutting away branches of fallen trees		
nunu umai ..	firing of the farm		
ngebak ..	clearing away of branches, debris, etc. in the event of a bad burn	*ngebak* ..	clearing away of branches, debris, etc. in the event of a bad burn
nugal ..	dibbling	*menih* ..	sowing
building of *langkau*, or farm hut		*mantun* ..	weeding
erection of fences (*pagar*)			
making of traps (*peti*, *bubong*, etc.)			
making of aeolian alarms, etc.			
guarding of the farm, especially at night		guarding of the farm, especially during the day	
		ngetau ..	reaping
berangkut ..	the carrying in of the *padi*	*muntih* ..	selecting of seed, and its subsequent care
nampi ..	threshing	*ngeruman* ..	separating of grain from straw
		berayar, and *muput* ..	initial winnowing by fanning
		muput ..	winnowing by hand trays (*chapan*)
		guarding of *padi* while it is being sunned	
besimpan ..	storing of *padi* in bins (*tibang*)	*besimpan* ..	placing of *padi* in baskets (*baka*) ready for storing

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Males	Females
The Rituals of Padi Cultivation	
beburong .. the taking of bird omens	preparation of offerings (*piring*) for all *padi* rituals
general supervision of ritual, especially during *manggol* and sowing	care of the sacred rices—*sanking* and *padi pun* care of *padi* charms (*pengaroh padi*)
organization of major *padi* rituals, such as *gawai benih, gawai minta ari, gawai memali umai*, etc.	participation in all *padi* rituals, with special responsibility for those accompanying the harvest
Subsidiary Tasks Associated with Padi Cultivation	
blacksmithing—making of adzes (*bliong*), bush-knives (*duku*), weeding implements (*ilok*), and harvesting knives (*ketap*)	making of *keban* (sowing baskets)
making of bark-cloth (*tekalong*), and bark carrying-straps	making of *sintong* (reaping baskets)
making of *lanji* (*padi* carrying baskets)	making of *baka* (large baskets for handling *padi*)
making of *bidai* (large mats for temporary storage and handling of *padi*)	making of mats (*tikai singang*, etc.) used during winnowing, sunning of *padi*, etc.
making of *kajang* (palm frond) covers, for protecting *padi* after reaping	
making of *tibang* (large, bark-bins for permanent storage of *padi*)	

177. This system of division of work between the sexes is supported by various social sanctions, and particularly by the strongly held traditional attitudes of young men. Young men are perfectly willing to join in the manly tasks of felling, dibbling, and the carrying in of huge loads of *padi* for threshing, but nothing will persuade them to participate in the essentially feminine duties of sowing, weeding and reaping. To do so would be to excite the immediate ridicule of their fellows, and, of shame, the Iban are extremely sensitive. But the system is not absolutely binding. When a man becomes responsible for the managing of a farm (i.e. from early middle age onwards), he is sometimes compelled to tackle women's work, if the crop is not to suffer. This is usually a direct outcome of the restricted size of the *bilek* family labour force. As we have noted, about 30% of *bilek* families have only one woman worker; and only about 20% have more than two. Thus sickness, pregnancy, etc. can leave a *bilek* family entirely without female labour at crucial stages of the agricultural cycle. In these circumstances a man is forced to engage in sowing, weeding or reaping—unless he can hire help from other *bilek* families. Younger men, and, in general, husbands under about 40 years of age, resent being placed in this position and participate grudgingly; but older men, who have slaked their wanderlust and settled down to farming as a main occupation, have a different attitude. These men (of about 45 years of age and over) come to identify themselves very closely with their farms, and to strive for abundant crops that will give them a surplus for performing head-hunting and other rituals, or for purchasing valuables of various kinds. Such older men voluntarily join in the work of reaping, and many of them assist in weeding as well.

178. This situation is illustrated in Table 11, which shows the participation of men of four different age groups in the tasks of sowing, weeding and reaping; the sample of 32 males being taken from Rumah Nyala.

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Table 11: Participation by Men in Sowing, Weeding and Reaping, which are Ordinarily Women's Work

Age Group	No. of Men in Age Group	No. of Men in Age Group who have at some time participated in		
		Sowing	*Weeding*	*Reaping*
16–30 years	9	nil	nil	nil
31–40 years	8	2	2	4
41–50 years	6	3	3	6
51 years and over	9	4	8	9

179. The restricted size of the labour team in many *bilek* families also results in conditions in which women have to tackle men's work. For example, a husband's *bejalai* may extend beyond the point he had planned, and his wife be left to contend with all the problems of the harvest; or sickness may deprive a *bilek* family of its only male during felling or dibbling. In such circumstances as these, Iban women carry on as best they can. The younger women are remarkably versatile, and able to cope with all male tasks with the exception of felling virgin jungle. At Rumah Nyala, there were two *bilek* families totally lacking male labour, both of them being owned by widows (e.g. No. 18 and No. 23). Unyang, a woman of about 40 years, had three daughters of 18, 13 and 8 years respectively, and a son of 5 years who was born about three days after his father's death. Abut, the second widow, was about 55 years of age, with a daughter of 25 years and a grand-daughter of 3 years; Abut's son died in 1949 a few months after the family had joined Rumah Nyala. Both of these families contrived to farm as independent units. They restricted themselves to young secondary jungle—thus avoiding the main difficulties of felling; and by joining labour-exchange (*bedurok*) groups, they were able to give their services in slashing and sowing in return for felling and dibbling on the part of the male members of other *bilek* families. The rest of the work—weeding, reaping, threshing, etc.—they were able to contend with themselves. It is significant that the existence of *bilek* families lacking mature males results in special types of land usage, for such households tend to farm land two or more years in succession—so avoiding the problem of having to fell well established secondary jungle. To this phenomenon we shall return when discussing the Iban system of land usage.

The Rôle of Children

180. In general, children under the age of about ten or eleven years do not participate in regular farm work, although there are occasional exceptions to this. For example, Rebut, the most successful farmer at Rumah Nyala, had provided his son aged 9, and his daughter of 7 years, with special equipment (e.g. bush-knives and reaping baskets, etc.) and they were encouraged to work at their parents' side. From the age of 12 years or so onwards, however, both boys and girls begin to join in tasks which lie within their powers, and soon come to make valuable contributions to the working of the family farm. Moreover, the assistance of even younger children as baby-minders is often of vital importance to small and newly founded households. As an example of this we may take the *bilek* family of Limau (No. 6), of Rumah Nyala. This household consisted of Limau (38 years), her husband Agun (45 years), their adopted son Tamap (11 years), and a

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daughter, Lijar, of nine months. In 1949, Agun was working virgin jungle, and because of the isolated position of his farm he did not join in any of the labour-exchange groups of his *dampa*; instead, he and his wife tackled all the work of their three acre *umai*. But Limau was a nursing mother, and during sowing, and weeding and reaping (in which both husband and wife joined), it was essential to have someone to look after her baby daughter. This rôle fell to 11 year old Tamap. Comparable *bilek* families are to be found in almost every Iban community.[1]

Participation by Men in Farm Work

181. Attention has already been drawn to the fact that Iban men do not fully participate in farm work until obliged to do so by immediate family circumstances. Let us now examine this situation in more detail. Typically every Iban *bilek* family has at its head a man who is responsible for the general management of its farm. He is normally the oldest man of the household, for among the Iban the elderly persevere with farming and other work until decrepitude compels them to hand over responsibility to younger men. There is no system of formal retirement. At Rumah Nyala there were three elderly men who were in process of handing over to a son or son-in-law, in 1949. One, aged about 63 years, was constantly incapacitated by a disease of the chest; while the two others, both about 70 years of age, were also weak and sickly. All three however, joined as often as they were able in the task of guarding their farms and in giving instructions on how various operations should be carried out. Because of their passion for going on *bejalai*, young men postpone full-time participation in farming for as long as they possibly can: that is, until the male head of the *bilek* family (i.e. father or father-in-law) dies, or becomes so decrepit that he cannot carry on. In these circumstances, a young man is compelled to turn to farming as a full-time occupation to provide for the subsistence of his wife and family, and the other members of his household. This critical turning point in a man's life is not reached however, until he is about 30 years old, and often not until he is approaching the age of 40—by which time his own son is usually old enough to be setting out on *bejalai* with uncles and older cousins. The average age for a man to take over the management of his *bilek* family's farm is in early middle age, at about 35 years or thereabouts.

182. From the foregoing it will be seen that the men of every Iban community may be divided into three main categories:

(*a*) those who have retired from full-time farm work;

(*b*) those who are actively engaged in managing a *bilek* family farm;

(*c*) those who contribute seasonal labour, but are still free to undertake *bejalai* during the rest of the year.

Of the 40 adult males of Rumah Nyala (one moron is omitted), 3 men fell into the first category, 24 into the second, and 13 into the third. The three old, semi-retired men we have already discussed. Those engaged as farm managers had an average age of about 45 years, with a range of from 28 to 70 years, as shown in Table 12.

[1]Under a subsistence economy such as that of the Iban, and with the household and farming unit being so small a group, older children inevitably come to play an important part in economic organization. This, and the *dampa* system (cf. Para. 70 seq.) resulting in the dispersal of families in very small groups, are factors which Government officers must take very carefully into account in planning educational and other social services for the Iban.

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Table 12: Ages of Men Managing Bilek Family Farms

Age Group	28–30 yrs.	31–40 yrs.	41–50 yrs.	51–60 yrs.	61–70 yrs.
Incidence	2	7	10	2	3

Finally, we come to the 13 men (8 of them married), who were not responsible for looking after a farm. All of these joined in felling, and with one or two exceptions, dibbling and threshing too, but for the rest of the year most of them were absent on enterprises of various kinds. During the period under review—1949-50—all but one of them was away on *bejalai* lasting for six or more months. The average age of this group was about 27 years, with the following range:

Table 13: Ages of Men who Contribute Seasonal Labour, but are Not Responsible for Managing a Farm

Age Group	16–20 yrs.	21–30 yrs.	31–40 yrs.
incidence	2	6	5

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183. Stress has been laid on the fact that every *bilek* family manages its own farm as an independent concern; there is however, among the Iban, a traditional system whereby different *bilek* families form co-operative work groups on a labour-exchange basis. These groups may operate during all or any of the four main stages of *padi* cultivation: felling, sowing, weeding and reaping. The groups vary in size from about two to six *bilek* families; and their formation is the outcome of personal negotiation between either the senior male members (i.e. for felling and dibbling), or the senior female members (i.e. for weeding and reaping) of the *bilek* families concerned. In general, the composition of each group arises directly out of the fact that the constituent *bilek* families are members of the same *dampa* (or farm house); although occasionally *bilek* families from neighbouring residences will choose to work together. Upon no *bilek* family however, is there any binding obligation to join any of these work groups, and it quite often happens that a household prefers to work alone. As we shall see this arrangement is widely followed during the harvest. For a *bilek* family to work alone is termed *mupok*, in contrast to co-operation with other families which is called *bedurok*.

184. It is usual for the composition of work groups to change from one stage of the agricultural cycle to another. During the 1949-50 season at Rumah Nyala, there was one series of arrangements for felling and dibbling, another for weeding, and a third for reaping. The various *bedurok* groups which obtained during felling (*nebas* and *nebang*) and planting (*nugal* and *menih*) are laid out in Table 14. (In each case the name of the *pun bilek* has been given; the numbers of *bileks* refer to positions in the main long-house).

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Table 14: Labour-Exchange Groups of Rumah Nyala in 1949

	Bilek families comprising bedurok group		*Notes*
Group 1	Adin	No. 6a	All members of the same *dampa* group
	Anjing	No. 22	
	Seting	No. 4	
	Bunsia	No. 12	
	Nyuai	No. 14a	
	Legan	No. 14	
Group 2	Sumbok	No. 10	Members of two neighbouring *dampa* groups
	Sulan	No. 20	
	Bangi	No. 1	
	Sube	No. 3	
	Abut	No. 23	
Group 3	Ubong	No. 19	Members of two neighbouring *dampa* groups
	Una	No. 15	
	Usah	No. 18	
	Majau	No. 13	
Group 4	Jala	No. 16	Members of three neighbouring *dampa* groups
	Rimbor	No. 11	
	Dumo	No. 2	
	Unyang	No. 18	
Group 5	Ja	No. 17	Members of same *dampa* group
	Kamba	No. 5	
	Kubu	No. 21	
Group 6	Gadu	No. 7	Members of same *dampa* group
	Gayar	No. 8	
	Babat	No. 9	
Group 7	Limau	No. 6	Worked alone (i.e. *mupok*)

185. The composition of these *bedurok* groups should be compared with the Table—No. 1—showing the *dampa* groups of Rumah Nyala during 1949-50.[1] It will be seen that in each case the *bedurok* groups are made up of *bilek* families coming from the same, or neighbouring *dampa*; in other words, *bilek* families whose farms all lay within a mile or two of one another. In the formation of *bedurok* groups the same general principles operate as those which we have already noted for *dampa* residential units. Cognatic kinship is the underlying basis, but relationships arising from membership of the same long-house community, and, more specifically, the same *dampa* group, also operate to a marked extent.

186. During the weeding stage, 13 (or 50%) of the *bilek* families of Rumah Nyala worked alone. The groups that continued to *bedurok* were:

(*a*) *Bilek* families: Nos. 10, 11, 16 and 23;
(*b*) „ „ Nos. 12, 14 and 19;
(*c*) „ „ Nos. 2, 3 and 18;
(*d*) „ „ Nos. 5, 17 and 21.

It will be observed that in all but one instance the composition of the groups had changed. In 1950, during the harvest, no *bedurok* groups were formed, each *bilek* family operating as an independent unit.

[1] [See pp. 37-38, Cat. 116.—Analyst]

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187. Let us now turn to a brief examination of the way in which a single *bedurok* group works. When the composition of the group has been decided upon, a rota is drawn up—representing the order in which the farms of the constituent *bilek* families are to be visited. In Group 4 (Ref. Table 14), for example, Jala's was the first farm to be worked upon; then those of Rimbor, Dumo and Unyang, until a return was made to the farm of Jala, and so on—one working day being devoted to each farm in turn. The system is one of strict reciprocity. Thus if *bilek* family A sends two women to weed on the farms of families B, C, and D, these three are each required, in return, to send two women to the farm of family A when its turn falls due on the rota; or, if it is not possible on that day, then on some subsequent occasion. This principle of exact reciprocity is rigorously followed, so that if family A sends only one woman to work on the farm of family B, family B will send only one woman in exchange—employing its additional women, on that day, in working on its own farm. In general, therefore, a *bilek* family with two women available for weeding will try to *bedurok* with other families having two women available. Again, a *bilek* family is entitled to drop out of a *bedurok* group as soon as all the work on its own farm has been completed. This situation often arises—the area to be weeded per head varying considerably from *bilek* to *bilek*. For example, at Rumah Nyala: *bilek* family No. 15, with two adult women and one man, is much better off as far as weeding goes than *bilek* family No. 21, with two adult women but two men and two boys to feed. When the work on its own farm is finished, then a *bilek* family is entitled to withdraw as soon as it has repaid all outstanding labour debts. Occasionally the women of a *bilek* family will carry on for a day or two after all these obligations have been fulfilled. This however, is known as 'helping' (*saup*, v. f. *nyaup*), and it is sharply distinguished from obligatory reciprocity under the *bedurok* system. Such 'help' is given to kin who, through sickness or some misfortune, find themselves in difficulties. It is given without any insistence on immediate reciprocity, but on the understanding—underlying all kin and other relationships within the long-house—that similar assistance will be offered should the donors ever find themselves in like circumstances.

188. Under the Iban *bedurok* system the labour of men and of women is of equal value for exchange purposes. A family lacking male members will give slashing (*nebas*) in return for felling (*nebang*), or sowing (*menih*) in return for dibbling (*nugal*). However the formal division of labour between the sexes is strictly observed. We have noted that a middle-aged or elderly man sometimes engages in reaping and weeding when there are not enough women available in his own household. But this is invariably on the man's own farm; he would never submit to doing women's work on someone else's *umai*. Indeed, an important motive in a household's decision to work alone (*mupok*) may be the fact that its senior man intends to join in weeding or reaping, and does not want to be bothered and possibly embarrassed by the presence of women from other families.

189. During *bedurok* the workers of each *bilek* family provide their own food in the form of cooked rice (*asi*), but it is the duty of the family whose farm is being visited to furnish a relish (*engkayu*) of some kind. This relish may be any food not ritually tabooed, but for reasons of pride it is usually the best which the host family can afford. Favourite relishes are: dried or preserved fish, prawns, animal flesh, fungi, cucumbers, pumpkins and other vegetables.

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190. The only time when all food is provided by the host family is at the ritual of *belaboh padi pun*—the annual planting of the 'sacred rice'. On these gala days large parties gather to join in the festivities. After they have assisted in dibbling and sowing they are entertained with rice beer (*tuak*), rice cakes of various kinds, and a meal garnished with especially prepared relishes and titbits. On one such typical occasion at Rumah Nyala there were 26 guests—men, women and children —representing nine different *bilek* families. Here too there is general reciprocity; thus although there is no insistence on exact repayment, host families are expected to return the visits of their guests. But there is seldom any difficulty in persuading people to attend; the *tuak*, choice food and bonhomie of *padi pun* rituals are part of an annual sequence of events to which everybody eagerly looks forward.

Working for Wages

191. We have seen that the Iban *bedurok*, or labour-exchange system is based on strict reciprocity. Far less widespread, but nonetheless well established, is the practice of working for wages (*gaji*). This kind of work may be engaged in at any stage of the agricultural cycle—and by either men or women. However, a family seldom seeks employment on someone else's farm unless compelled to do so by food shortage. In most long-house communities there are families which have great difficulty in providing sufficient rice for their subsistence. Chief amongst these are those *bilek* families (usually of widows), that lack mature males; in Rumah Nyala, for example, there were two such households. Again, it sometimes happens, either through mismanagement or mischance, that a family will lose a major part of its crop. In these, and similar circumstances, employment is sought on the farm of some other *bilek* family.

192. Usually work of some kind is available, for so variable are the conditions of Iban agriculture that yields differ tremendously from family to family within the same long-house. This means that each year some families have a surplus of *padi*, while others are not able to provide for their minimum needs. In these circumstances those families possessing a surplus are usually willing to employ others in an attempt to increase production. Among the Iban *padi* is the most readily convertible of all forms of wealth. With few exceptions a family will only work for others when forced to do so by shortage of food, and when they do work, it is in *padi* that they want to be paid. Rates of payment vary from case to case, but at Rumah Nyala in 1950, the standard rate was one *gantang* of *padi* per day's work—and, in addition to this, food was provided by the employer. This usually amounts to not more than a mid-day meal, for if members of the same community, the workers normally return to their own *dampa* to spend the night. One or two instances did occur however, of women from neighbouring long-houses working at Rumah Nyala; and these women lived in, and received free meals during the whole of their stay.

193. It is also permissible to perform farm work in redemption of debt. At Rumah Nyala in 1949, a woman from a nearby long-house did three days of weeding in lieu of paying one ikat skirt (*kain kebat*)—the fee charged for treating her sick child. At Rumah Tungku, I came across a man who was being required to do three days of work (the slashing of undergrowth) in return for a fighting cock and a bottle of kerosene which he had borrowed when performing a religious ritual. Another man was giving one day's labour in return for the forging of two bush-knives.

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194. Working for wages often occurs between close kin. At Rumah Nyala, in March, 1950, Gayar, a woman of about 50 years, spent two days in reaping the *padi* of her brother's farm; for this she received $3 in Sarawak currency. Gayar's own *padi* was of excellent quality and she was assured of a certain surplus; her motive was not to obtain *padi*, but ready cash for purchasing matches and kerosene from a Chinese boat hawker. It is important to note that Gayar was required to work, even for her own brother. This is normal Iban custom between close kin who are members of *different bilek* families; but it is usual to give close kin more generous payment than remote kin or strangers. Thus Gayar was given $1·50 per day, whereas the standard rate in 1950 was only $1 per day—*padi* being valued at $1 per gantang. Many similar instances could be quoted. Occasionally visiting Kenyahs (from Long Nawan) and Penihing (from the Makaham) are employed on Iban farms, and paid in *padi* for use on their return journeys. Iban men seek similar employment when travelling in the territories of other tribes.

195. We have noted that Iban do not normally work for wages on the farm of another *bilek* family unless compelled to do so by economic necessity. However, over the years almost every *bilek* family has experienced one or more crop failures, and been obliged to earn *padi* by temporary employment with others. There is thus no especial stigma attached to working for wages within one's own or any other long-house. In 1950 indeed, the daughter and daughter-in-law of the headman (*tuai rumah*) of Rumah Nyala spent several days in reaping—in return for *padi*—on the farm of another *bilek* family. On the other hand there was one family at Rumah Nyala (that of Gadu, No. 7) which did pride itself on the fact that its members had never found it necessary to work for others.

196. The incidence of wage labour varies considerably from year to year. If conditions are favourable only a very few families are without supplies; but in adverse years, and particularly after a bad burn, poor crops are much more in evidence. The 1949-50 season at Rumah Nyala was one of the worst for many years, and resulted in the women of nine different *bilek* families engaging in farm work in return for *padi*. They were variously employed—mostly in reaping—on the farms of four *bilek* families each of which produced a surplus. This incidence (i.e. 9 out of 25 *bilek* families) is high, but it is important to note that in general, very little time is actually spent in working for wages. A *bilek* family always attends first to the cultivation of its own farm, and only when this has been thoroughly accomplished turns to working for others. This means that wage labour only becomes available during a restricted period towards the end of the various stages of the *padi* cycle. Moreover, even when labour is hired, the members of the employing *bilek* continue to participate so that the task in hand is soon completed. It is rare therefore, for a woman to spend more than about 10 days a year in working for others; and in several of the nine cases quoted above, the period involved was one of only two or three days. We may say then that, among the Iban, wage labour is an institution of very subsidiary importance in what is paramountly a subsistence economy.

The Time Factor in Padi Cultivation

197. We have already surveyed the techniques employed during the principal stages of the *padi* cycle, and given some account of the organization of labour in agricultural work. Let us now turn to a brief assessment of the time involved in the cultivation of hill rice—as it is practised by the Iban, examining first the farming calendar. The agricultural year begins with the *matak ka burong* ceremony

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The agricultural year begins with the malah ka burong ceremony 1951
in which the *tuai burong* (dugur) formally distributes omen sticks, and inaugurates 243*
the rites of *pemanggol*. This is usually in May or early June, and thereafter each 221
bilek family plans its own operations as an independent unit—with the important reservation that the owners of neighbouring farms must always be consulted when the date of the burn is being settled. The various processes of *padi* cultivation are so well standardized however, that although each *bilek* family makes its own arrangements, they keep closely in step with one another throughout the year. In other words, all families initiate major operations and rituals at about the same time—with not more than about 10 days separating first from last.

198. To illustrate the main sequence of events let us take as an example the farming calendar of the *bilek* family of Kamba, the *tuai burong* of Rumah Nyala. In 1949-50 Kamba was working a principal farm of about 5 acres in virgin jungle (*kampong*), and a subsidiary plot of about 2 acres in secondary growth (*dijap damun*). Both of these farms were among those which I selected for special study, and listed below is a chronicle of the chief incidents of the 1949-50 season.

Table 15: Calendar of Chief Events of Agricultural Cycle
(Ref.: *bilek* family of Kamba, Rumah Nyala, 1949-50.)

Event	*Date*
Inauguration of *pemanggol* rites, and work commenced on clearing the jungle	1 . 6 . 49
Clearing of jungle completed	1 . 8 . 49
Farm fired (after approximately one month's delay, caused by adverse weather)	14 . 9 . 49
Nangkal rites; dibbling and sowing begin	18 . 9 . 49
Belaboh padi pun rites (the planting of the sacred rices, *padi pun, sangking*)	25 . 10 . 49
Sowing completed	27 . 10 . 49
Weeding begins	1 . 11 . 49
Weeding ends	5 . 1 . 50
Reaping of *padi muda* (quick-ripening rices)	12 . 2 . 50
Nganjong ka penyadai rites	27 . 2 . 50
First carrying of *padi* to *dampa*; *ngahu ka padi* rites	25 . 3 . 50
Threshing begins	26 . 3 . 50
Reaping of *padi pun*; i.e. end of the harvest	22 . 4 . 50
Final winnowing	30 . 4 . 50
Storing of *padi* (*besimpan*)	2 . 5 . 50

199. It will be seen that farming operations—from the initial rites of clearing the jungle to the final ritual of storing the grain—extended over almost exactly eleven months. In 1949 however, exceptionally wet weather delayed the burn for about a month. In normal years the total duration of the *padi* cycle is probably about ten months. But this figure applies to the farming of virgin jungle; if young secondary growth (e.g. *krukoh*, *dijap*, etc.) were being farmed the clearing period would be considerably shortened, and the total cycle not more than about nine months in length. Of course not all of this season of nine or ten months is spent 243*
in actual farm work, for there are slack periods, notably between the end of 221
felling and the burn, and between the completion of weeding and the harvest, 461
when there is little to be done, and both men and women can turn to other tasks. In Table 16, which includes data for three different farms of Rumah Nyala, the overall durations of the main divisions of the farming cycle are shown.

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Table 16: Duration of Main Stages of the Agricultural Cycle: (in 1949-50)

Activity or Period	*Total Duration in Days*		
	umai Kambe	*umai Kubu*	*umai Gadu*
Pemangpol to completion of felling	62	63	53
Interval between completion of felling and firing of farm	44	43	60
Interval between firing of farm and commencement of sowing	3	3	3
Dibbling and sowing	40	41	31
Interval between end of sowing and commencement of weeding	4	4	3
Weeding	61	64	57
Interval between end of weeding and commencement of reaping	42	41	56
Reaping	70	70	46
Period from end of harvest to storing of grain ..	10	21	25
Totals:			
(*a*) From first rites of felling to end of the harvest	326	329	309
(*b*) From first rites of felling to storing of the grain	336	350	334

200. The figures given in Table 16 record the overall duration in days of principal stages of the agricultural cycle, but this does not mean that work was performed on all of these days. Among the Baleh Iban there is no observance of Saturday, Sunday, or any other statutory holiday of the British or any other calendar; but rest days do occur nevertheless. Each month one day's rest is observed to mark the waning of the moon (*bulan rumpang*). Bad dreams (*mimpi jai*) and evil omens of many different kinds regularly prevent participation in farm work, or compel its abandonment. A death involves compulsory mourning (*ulit*) by the whole long-house community, and the cessation of farming for three days. It is difficult to make an accurate reckoning of the incidence of these and similar customary observances, but I would estimate that the loss of time involved amounts to about 15% to 20% throughout the entire farming year. It should be noted however, that omens which prevent farming do not necessarily interfere with other work, so that a day lost on the farm is, more often than not, usefully spent in coping with some pressing domestic task.

Time Expended in Man-days per Acre

201. Having examined the general calendar of the Iban agricultural year, let us now face a more difficult problem: the estimation of time expended in man-days per acre—for the main stages of *padi* cultivation. For certain operations such as dibbling and sowing fairly precise figures can be given, for in these instances a standardized technique is employed, and planting conditions differ but slightly from farm to farm. On the other hand, the amount of labour involved in clearing land for planting varies considerably, with primeval forest (*kampong*) at one extreme and scrub (*krukoh*) only a few months old at the other; and between these two limits there are a score of differing types of secondary growth. After a good burn planting can be embarked upon without delay, but in adverse years much time is lost in *ngebak*, or clearing the land of unburnt branches. The infestation of a farm by weeds is much heavier in the case of secondary growth which has been felled and fired several times, than it is with jungle being cleared

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for the first time. Furthermore, weeding is a task which may be performed either carelessly or with great thoroughness, and it is difficult to arrive at an unequivocal standard. Reaping, while conducted by a standard method, takes more or less time per acre depending on the abundance of the crop. These, and many other variable factors must all be taken into account. In reaching an estimate I have relied as far as possible on detailed measurements of individual processes. For example, my estimate of sowing time is based on an average derived from about 50 measurements of the techniques of more than a dozen women of Rumah Nyala, and so on. These figures are supported by data on "days worked" derived from informants at Rumah Nyala, and checked in most cases by my own field observations. 243X

202. We have seen that Iban agriculture is based on a clear division of work between the sexes. No attempt has been made to equate men's with women's work; any estimate of time spent in farming must accept the fact of division of labour as its starting point. Moreover it should be noted that in several of the main operations of *padi* cultivation, a "woman's day" is more than equal to a "man's day". In sowing, weeding, and reaping a woman is considerably more efficient than the average man. Conversely, men are markedly more efficient than women at felling, dibbling, and the transporting of *padi*. The term "*man-day*" must be defined therefore as a normal day's work for either a male or a female, and the fact of division of labour must be constantly borne in mind.

203. Finally, there are certain kinds of work, such as constructing fences, erecting traps, and standing guard over the ripening *padi*, which are for the protection of the farm as a whole. The time devoted to these tasks, and especially to the most important of them all—standing guard over the maturing crop—is not directly related to acreage. For example, much more time may be spent in guarding a remote three acre farm in virgin jungle, than a five acre farm in secondary jungle and overlooked by a *dampa*. This crucially important period of guarding has, therefore, not been expressed in terms of man-days per acre, but is classed as applying to the farm as a whole.

204. In order to give some notion of the variation that occurs with different types of land usage, two sets of figures are given: one for virgin jungle, or *kampong*, and the other for mature secondary jungle, or *daman*. *Kampong*, it will be noted, takes longer to fell, but there are usually fewer weeds. Again, for such tasks as weeding and reaping, a span of days has been shown to indicate the kind of normal variation that is likely to be encountered. This means that for each operation there is a minimum and a maximum total. In most cases the number of days expended per acre of farm land would fall somewhere between these two totals.

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Table 17: Time Expended in Man-Days per Acre

Activity	*Division of labour*	*Time expended in man-days per acre*	
		Kampong, (or virgin jungle)	*Damun (or secondary jungle)*
nebas, or slashing	men and women	6	5—6
nebang, or felling	men	12—14	4—5
ngeredak and *ngebak*, or secondary clearing	men	2—5	2—5
nugal, or dibbling	men	4	4
menih, or sowing	women	5	5
mantun, or weeding	women	12—16	15—20
ngetau, or reaping	women	14—20	14—20
berangkut, or transporting of the *padi*	men	1	1
Minimum Total		56	50
Maximum Total		71	66

The time spent in building fences and traps, in constructing a small hut (*langkau umai*), and in keeping watch over the ripening *padi*, amounts—in most cases—to about 30 days per farm.[1]

The Size of Bilek Family Farms

205. Each *bilek* family manages its own farm, and—at each harvest—hopes to produce sufficient *padi* to provide for its subsistence during the ensuing year. What then is the size of a *bilek* family's farm? What is the average area farmed each year per head of population? As already explained (Para. 63-64), the ritual prohibitions which surround the cultivation of *padi* prevented me from carrying out ordinary plane-table surveys. Instead, I resorted to sketch maps based on paced measurements and a few compass readings. One of these sketch maps was prepared for each of the main farms of Rumah Nyala, and each farm was then examined from several different vantage points, and a careful estimate of its acreage made.[2]

206. Among the Iban it is a not uncommon practice for a *bilek* family to

[1] In Appendix XIV of the Annual Report of the Sarawak Department of Agriculture (for 1948), it is estimated that the "total labour requirement" for "hill/dry *padi* cultivation" is approximately "25 man-days per acre on the average." (This is "arbitrarily taking 1 woman-day to equal 2/3 man-day.").

The methods used in reaching this estimate are open to a number of criticisms, and, from my own field investigations, I consider it to be a drastic underestimate. This view is supported by Dr. W. Geddes' field research among the Land Dayaks of the First Division. Dr. Geddes made very detailed studies of two dry *padi* farms, and found that on one of these farms 46·8 man-days per acre were expended, and on the other 102·8 man-days per acre. (Ref.: Report, MSS). If the time expended in guarding a hill farm is included (as it must be) it would seem probable that a hill farm involves as much, if not more, labour than a swamp farm (*umai paya*).

There would seem to be little justification for the view (expressed in Paragraph 8 of the Appendix in question), that "the work involved in cultivating a hill/dry *padi* crop is far less arduous than that entailed in working a swamp/wet *padi* crop."

A very different point of view is stated in a paper on "Padi Planting Methods in Malaya," which appeared in the Malayan Agricultural Journal in 1939 (Ref.: Vol. 27, p. 50): "Dry *padi* calls for an amount of labour and care which not all cultivators are prepared to give, and which is greatly in excess of that required to produce a crop of the wet type."

[2] I was fortunate in obtaining a check on a number of my acreage estimates when B. E. Smythies, Esq. (then Forestry Officer, Third Division) visited the farm lands of Rumah Nyala.

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possess, in addition to its main farm (*umai*), a subsidiary farm—known as a *tampas*. Varying in area from one to two acres, a *tampas* is always cleared after work on the main farm has been completed. It is never in virgin jungle but almost invariably in young secondary growth, and near to the *dampa* of the family concerned. Again, for ritual reasons a *tampas* is always out of sight of the main farm where the *padi pun*, and other sacred rices are planted. In 1949, six *bilek* families of Rumah Nyala each possessed a *tampas*. Sketch maps of these subsidiary farms were also prepared, and in what follows *tampas* acreages have been included.

207. In estimating farm acreages two quite distinct stages have to be taken into account: (*a*) the area felled, and (*b*) the area under *padi*. By the phrase "area felled", I mean to denote the area of land from which jungle has been cleared with the intention of planting *padi*. If conditions are favourable the whole of this felled area is sown, but frequently this goal is not achieved. Adverse weather is usually to blame. Prolonged rain may so delay and hinder the burn that extensive sections of a farm (i.e. up to an acre and more in extent) have to be abandoned and allowed to revert to scrub. Again, a bad burn permits weeds to flourish to such a degree that, in some places, the *padi* is choked and fails to mature. Sickness or other domestic troubles may interfere with the operations of sowing and weeding, and prevent the full utilization of the land which has been cleared. Hewn out of the surrounding jungle an Iban *umai* is very conspicuous, and there is never any difficulty in discerning the boundaries of the felled area. As the harvest approaches however, a new problem arises. What is the area, in each farm, over which *padi* is actually growing? The extent of this area is a good deal more difficult to estimate. Often it is highly irregular in outline, with inlets of unfired scrub, and enclaves—steep banks and gullies—which it has not been possible to plant. When the *padi* reaches maturity these unplanted waste patches are clearly visible, and it becomes feasible to assess their extent. During the weeks that preceded the harvest, each of the farms of Rumah Nyala was re-visited, the sketch maps amended, and an estimate made of the area actually under *padi*. By the "area under *padi*" then, I mean to denote all those sections of a farm in which *padi* has been successfully brought to maturity; or, in other words, that area of a farm from which the crop is reaped.

208. In 1949, the total area felled by the 25 *bilek* families of Rumah Nyala was approximately 112 acres, while the total area under *padi* (according to my estimates) was 89 acres. This means that there were, in all, some 23 acres of cleared land (or 20% of the total) which were not sown, or on which *padi* failed to grow. This is a very high proportion, but it must be remembered that 1949 was an exceptionally wet year, and that in not one instance was there a really successful burn. Indeed, so inadequate was the firing of some farms at Rumah Nyala that it proved impracticable to plant more than about 60% of the area felled. In normal seasons the proportion of unsown land probably falls to about 5%—10% of the total, and in exceptionally dry years when the burn is complete only rocky outcrops and gullies would remain unplanted.

209. In 1949 the *bilek* family farms of Rumah Nyala varied in size (i.e. area felled) from 1¼ to 6¾ acres; while 70% of farms fell within the range of from 3 to 5½ acres. The total area felled was 112 acres. As there were 140—men, women and children—in the community, this means that the average area felled per head of population was 0·8 of an acre. (Within individual *bilek* families the average area felled per member ranged from 0·5 to 1·3 acres). If however we

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take the area actually under *padi* (i.e. 89 acres), the average per head of population drops to about 0·6 of an acre.

210. It is also of interest to examine the average acreage per worker, this has been done in Table 18.

Table 18: Acreage per Worker

	Ref.: area felled	*Ref.: area under padi*
Average area per head of population (140 men, women and children in the long-house)	0·8 acre	0·6 acre
Average area per worker (i.e. throughout agricultural cycle; a total of 85 persons, cf. Para. 164)	1·3 acres	1·0 acre
Average area per male worker participating in felling (total of 50 men and boys; 14 of the men went on journeys as soon as felling was completed)[1]	2·2 acres	
Average area per female worker (49 in long-house community)		1·8 acres
Average area per weeder (49 females, plus 11 men who assisted in weeding)		1·5 acres

211. In Part I of this report we recorded the fact that the average *bilek* family contains about 5 or 6 members, the arithmetical mean being 5·7 members. Accepting 0·8 acre as the area farmed per head of population, it follows that the average *bilek* family farm is about 4½ acres in extent. This figure is derived from detailed measurements of the conditions prevailing in one Iban community, but it is supported by my general observations in the Baleh region, and is, I believe, reasonably accurate. It is however, widely at variance with the estimate of 10 acres per year per family, which has been published by the Sarawak Department of Agriculture.[2] In my opinion this figure of 10 acres is undoubtedly an over-estimate. Nowhere in the Third or Second Divisions did I encounter a *bilek* family possessing a farm of this size, though it is possible that exceptionally large families (i.e. containing 12 or more members) might bring an area of about 10 acres into cultivation.

212. Comparative data on hill *padi* cultivation are scanty, but such material as does exist supports the view that the average area farmed annually by a family of *five members* does not *exceed* about 4 acres. Listed in Table 19 are estimates from five different regions in South-East Asia where hill rice is grown by the method of shifting cultivation.

[1] Seven of the fourteen men here listed were young men from the Ulu Batang Ai and the Sungai Kanyau. They were on a *belalai*, and had become temporary residents of Rumah Nyala—each living with a different *bilek* family. Such temporary residents are called *orang kampar*. In return for their assistance in felling, etc. they received *padi* (for their return journey) from their hosts.

[2] Sarawak Department of Agriculture, Annual Report for 1948, p. 50.

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Table 19: Area Farmed Annually by Family of Five Persons under System of Shifting Cultivation of Hill Rice; Comparative Data for South-East Asia 243X 311

Reference[1]	*Region*	*Size of Family*	*Average Annual Acreage*
(*a*) Leach	Burma	5	2½—3 acres
(*b*) Izikowitz	French Indo-China ..	5	3½ acres
(*c*) Pelzer	East Indies	5	2·47 acres
(*d*) Geddes	Sarawak (Land Dayaks)		3½ acres
(*e*) Freeman	Sarawak (Iban) ..	5	4 acres

213. An Iban farmer does not, of course, have any method of calculating the area of his farm. What he does know, from experience, is the rough extent of the land with which his *bilek* family can cope in any particular year. The crucial limiting factor, in most cases, is the area which the available labour force of the family can effectively weed. This, as we have seen, is about two acres per worker, under ordinary conditions. Very often a *bilek* family is in a position to increase the felled area of a farm (particularly when secondary jungle is being worked), but there is no point in going beyond the area which can be effectively cultivated. If this is done the family concerned is wasting its reserves of secondary jungle, and unnecessarily shortening the duration of its grand cycle of cultivation. In general however, there does seem to be an overall tendency to fell a slightly larger area than the family can comfortably cultivate. The Iban farmer is always praying and planning for a surplus, and with this end in view he usually makes his farm ambitiously large. This is also a policy of assurance against adverse conditions, for if a poor burn is encountered and part of the farm has to be abandoned, there will still be enough left to produce minimum requirements—or so the farmer hopes.

Yields

214. We now come to the problem of yields. What sort of crops do Iban families obtain from their clearings in the jungle? Collecting data on this subject was far from easy. It had been my intention to establish test plots on as many farms as possible, and collect a detailed series of measurements; but when I put this proposal forward, strong objections were raised, just as they had been against the surveying of farm land. The *padi* spirits (*antu padi*), the Iban claimed, would be deeply offended at such treatment; there was a danger indeed, that they might flee the farms and cause disastrously poor crops in subsequent years. So deeply

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[1]References:

(*a*) Leach, E. R., "The Advancement of Science," Vol. VI, No. 21, p. 27 seq.: "Some Aspects of Dry Rice Cultivation in North Burma and British Borneo."

(*b*) Izikowitz, K. G. "Lamet: Hill Peasants in French Indo-China," 1951, p. 285.

(*c*) Pelzer, K. J., "Pioneer Settlement in the Asiatic Tropics," 1945, p. 24. (This estimate is based on the findings of the Dutch authority—Van Beukering).

(*d*) Geddes, W., New Zealand Geographical Society Record, No. 12, 1951, p. 7.

(*e*) This estimate is based on my average of 0·8 acre felled per annum per head of population; if allowance is made for land cleared but not brought into cultivation, a reduction is necessary. At Rumah Nyala in 1949-50, for example, the average area *under padi* per five persons was only 3·1 acres.

(cf. also, Allsop, F., "Shifting Cultivation in Burma," Proceedings of the Seventh Pacific Science Congress, vol. VI, 1953, p. 283: "It has been found that an average of two to three acres per family is as much as can be efficiently worked and is sufficient to provide ample supplies of food-crops if properly tended.").

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rooted were these objections that I was obliged to abandon my plans, for to persist would have been to lose the goodwill of my helpers and informants. In one instance however, I did persevere. For several months I used every persuasion I could devise, holding out greater and greater offers of recompense, until one man, whose farm I had selected for an intensive study of the ritual of *padi* cultivation, submitted to my pleadings. He agreed to let me measure a chosen plot of his *padi* on the last day of the harvest. After several set-backs—for other members of his family were opposed to the idea—I succeeded in measuring the yield of a test patch: 22 ft. × 11 ft. or 1/180th of an acre in area.

215. Many families also refused, for ritual reasons, to let me measure the contents of their *padi* bins—even after the grain had been stored away. However I did manage to take detailed measurements of the holdings of four *bilek* families, and to obtain approximate estimates—either by inspection or from testimony—for all the other households of the long-house. As already explained the Iban store their *padi* in large bark-bins. These bins are cylindrical in shape, and as the grain is packed down very tightly it is possible to calculate their contents with reasonable accuracy. It is also necessary however, to keep a careful check on the domestic arrangements of the families concerned, for often an appreciable proportion of the new crop is consumed before storage takes place.

216. Let us begin with a discussion of the results obtained from my solitary test plot. The farm on which it was situated had been cut from *dijap krukoh kampong*—that is, virgin jungle first felled in 1944, had been farmed again in 1945, and then allowed to lie fallow for three years before being cleared and cultivated for a third time in 1949. According to the Iban with whom I discussed the matter it was land of good average quality, and this was also my impression. On April 24th, 1950 only a small area of good quality *padi sangking* remained to be reaped; I selected a typical section, measured out a plot 22 ft. × 11 ft., and marked its boundaries with wooden stakes. It was then harvested under my supervision; two women took part, and the task kept them occupied for just on 28 minutes. They handed over to me all the *padi* they had reaped, and I carried it back to be threshed and winnowed that same morning. From the first threshing (which took 6½ minutes) 16·4 pints of grain were obtained; and from a second threshing (taking 3½ minutes) 0·7 of a pint; there was thus a total of 17·1 pints. (All measurements were by capacity). The grain obtained by threshing was then winnowed by hand (i.e. in a *chapan*), and this resulted in the rejection of 1·85 pints (i.e. husks without kernels), or a loss of 10·8%, by capacity. There remained 15·25 pints.

217. This considerable reduction in quantity following winnowing deserves special comment, for it is a phenomenon which greatly concerns the Iban. As the harvest progresses each *bilek* family stores its threshed *padi* on the *ruai* (public gallery) of the *dampa* or long-house, until the day arrives when the whole crop is winnowed. Neighbouring families take particular interest in comparing the crop before and after winnowing. If a considerable reduction in quantity is detected, this is taken as an indication that the charms and magico-religious rites of the family concerned have not been fully effective. A similar comparison is often made before and after threshing. On several occasions my attention was privately drawn to large reductions: "How very much Kamba's *padi* has gone down after threshing" ("*Padi Kamba udu surut udah nungko*"); and I was told that the differential behaviour of *padi* during threshing and winnowing was evidence for the existence of the *padi* spirits which clung more to some families than to others.

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Furthermore, the fact that winnowing may result in a marked loss raises a question of method. The loss of approximately 11% for the test plot under discussion is probably typical, and in many cases, certainly, the proportion rises well above this figure. When yields are being calculated therefore, it would be of great interest if a measurement of proportional loss due to winnowing was included. Even if this is not done, it is clearly important for every investigator to state clearly whether he is speaking of winnowed or unwinnowed yields. In the account that follows all of my measurements and estimates refer to winnowed *padi*.

218. The winnowed yield of our test plot (i.e. 1/180th of an acre) was 15·25 pints of *padi*. This equals a yield of 343 gallons, or 42·8 bushels per acre. This is a very high figure, representing a return of something like ×60 on seed sown; and it must be stated at once that a yield of this abundance is well above the normal average for an Iban farm. The test plot was situated in *padi sangking*, which had been very thoroughly weeded, and was easily the best *padi* on the entire farm. On other parts of this same *umai* weeds had gained the upper hand, and the crop was very sparse; the general average for the whole area of about 5½ acres was only 117·5 gallons per acre. However, although out test plot yield representing 42·8 bushels per acre, is far from typical of average crops, it is significant as an indication of the kind of return which can be expected under favourable conditions from carefully tended hill *padi*.

219. Just before the test plot was reaped I recorded in my notes that it contained *padi* of very high quality, and only slightly below the best which I had seen; if the very best *padi* were allotted 10 points, that of the test plot—so I estimated—would receive between 8 and 9. Subsequent observations confirmed this view, and there can be little doubt that under ideal conditions small areas of hill *padi* do sometimes attain a yield equal to 45, and even 50 bushels per acre. This is not to suggest however, that such abundance is ever attained over an entire farm. In a tract of five or more acres of steep hill side, there are always a few unprolific or infertile patches, and I would place the upper limit of abundance for an entire farm at not more than about 35-40 bushels per acre; and even so it is rare for this level of output to be achieved.

Normal Yields of Bilek Family Farms

220. What then is the normal, average yield per acre of an ordinary Iban farm? As already mentioned, I was able to make controlled measurements of the total yields of four different *bilek* family farms. These data are laid out in Table 20; in each case an allowance has been made for *padi* consumed before storing took place.

Table 20: Yields of Four Bilek Family Farms of Rumah Nyala in 1950

No. of bilek family, and name of pun bilek	*Area of farm (in acres)*	*Total yield of farm (gantangs)*	*Yield of padi per acre, for entire farm (gantangs)*
18 Bangi	5	960	192
20 Sulan	4¾	620	130·5
21 Kubu	5⅝	639	117·5
5 Rumba	6¾	710	109·2

221. For the whole of Rumah Nyala, the average yield per acre (according to my estimates) was somewhere about 118 gantangs. Not too much reliance should

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243 433 be placed upon this figure however, for in a number of instances I was obliged to base my estimates on verbal testimonies, and only in the four cases quoted above were detailed measurements taken for entire farms. In one further case I was able to make an assessment of yield for a measured area. This was for part of a subsidiary farm (*tampas*) which had been hastily cut from young secondary growth (*dijap damun*), and planted entirely with glutinous rice (*padi pulut*). Because the *bilek* family concerned was short of female labour this *tampas* was only very cursorily weeded, and a crop of *distinctly poor quality* was the result. A survey with tape and compass showed the area to be about 7/16th of an acre, and the winnowed crop from this plot was 44·5 gantangs, equalling a yield per acre of about 102 gantangs.

222. Easily the highest average yield at Rumah Nyala in 1950, was that of 192 gantangs per acre achieved by Bangi's *bilek* family. Only two other households exceeded 150 gantangs per acre, but only three fell below the figure of 100 gantangs per acre. In assessing these yields it is important to remember that 1949-50 was an unusually poor season. Abnormally wet weather delayed and interfered with the burn, and—according to the members of Rumah Nyala—resulted in the worst conditions they had encountered since before the war (i.e. 1941). If this be true (and there is every reason to believe that it is), we can accept yields of from about 13 to 16 bushels per acre as typical of the sort of return generally achieved under worse than average conditions.

223. In the best years on the other hand, remarkably heavy crops are sometimes produced. Here I am relying mainly on Iban testimony, but in a number of instances I was able to calculate the capacity of the bins which had been filled in previous years, and so obtain rough estimates. The Iban themselves measure [804] *padi* by the basketful. An average basket (*baka*) holds about one *pasu*, or bushel. About 20 *pasu* make one *dunjong*. (The term *dunjong* refers to a heap of *padi* left on the *tanju* after winnowing; it is only a rough measure and undoubtedly varies a good deal; but I estimate 20 *pasu* to be fairly typical). Four *dunjong* make one *lumpong*—a measure containing approximately 80 bushels. The Iban expression for the obtaining of an exceptionally good crop is "*bulih padi*" (literally, "got *padi*"); it is used to describe a heavy yield, and always carries the implication of a substantial surplus. According to the Iban, a *bilek* family may be said to have "*bulih padi*", when it has achieved a crop of more than one *lumpong*. If two *lumpong* (160 bushels) are obtained, this is said to be "*bulih padi amat*" ("a truly heavy crop"). A number of families of Rumah Nyala claimed to have attained yields of two *lumpong* in former years.

224. There can be little doubt that with fully favourable weather conditions, and particularly when working virgin land of good quality, Iban farmers are sometimes able to achieve crops ranging from 30 to 40 bushels per acre. As we have seen the test plot established at Rumah Nyala gave a yield equal to just over 40 bushels per acre; and one family, despite the adverse weather conditions, attained a general average of almost 25 bushels per acre from a farm that was predominantly secondary jungle. In good years, say the Iban, the *padi* is so thick that even "to walk through it becomes impossible", ("*enti baoh amat padi, enda olih jalai*"). One man told me of a crop (the best he has ever had) which was so heavy that he had to hire seven women from other *bilek* families (at the high wage of three gantangs of *padi* per day per worker) in order to complete the harvest. Again, almost all Iban are able to provide concrete evidence of past bountiful harvests by pointing to gongs, jars and other valuables, which have

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been purchased with surplus *padi*. Hugh Brooke Low (the first Government officer to reside in the Kapit District), corroborates this point. He records that the Iban sometimes "grow far more than they require for their own consumption, and with the residue they purchase necessaries, such as salt, steel, iron, and luxuries, such as personal ornaments, for their families. If the harvest has been really plentiful they are even able to afford to purchase gongs and toddy, and perhaps a jar or two".[1]

225. At the same time, Brooke Low draws attention to the fact that "harvests vary very much in the quantity produced", and that want is not at all unusual; thus "a failure in the burning of the old jungle owing to too much wet, or want of sun in the ripening season, so injures the crop as to put the inhabitants to great straits to obtain means of maintaining life".[1] These observations are as true to-day as they were more than sixty years ago when Brooke Low was a resident of the Third Division. If Iban agriculture is to be properly understood it is vitally important to appreciate the fact that growing *padi* by shifting cultivation, in regions with a rainfall of 150 inches and more per annum, is a highly uncertain undertaking. In good years, when all but the largest logs are reduced to ashes by the burn, and there is adequate rain for the young *padi*, bountiful crops are the rule. But in the succeeding season, adverse conditions may so retard growth that only the most efficient farmers produce a surplus, and many fall far short of their minimum requirements. To this point we shall refer again presently. In passing, it may be noted that the hazards and uncertainties of Iban agriculture are judged, by the Iban, to be very largely the result of magical and supernatural forces; and the very fact that crops do vary so much from family to family is evidence—in Iban eyes—of the truth of their beliefs. Success comes to those families that encounter propitious omens and possess the most potent charms, magic and ritual knowledge; failure to those that lack these things.

Comparative Data on Yields from Dry Rice Cultivation

226. To conclude, let us make a brief survey of certain comparative material, from South-East Asia, on yields obtainable from hill *padi*, for such data are very useful in helping one to come to a balanced opinion on a rather difficult question.

(*a*) In his survey of dry rice cultivation in Malaya, Dr. H. W. Jack writes: "Under good conditions this type of cultivation can be made to yield up to 350 gantangs of *padi* to the acre as a first crop on newly cleared jungle land, the yield for the second crop being limited to about 250 gantangs. A third crop rarely produces more than 150 gantangs per acre".[2]

(*b*) Mr. J. A. Craig, who carried out an investigation on dry *padi* in the State of Kelantan, Malaya, found that two varieties gave an average yield of over 390 gantangs per acre, while the general average for an area of 35,073 acres was 220 gantangs per acre.[3]

(*c*) In discussing conditions in North Burma, Dr. Edmund Leach states that the best taungya (i.e. dry *padi*) land can "give yields of 40 bushels and over, though under modern eroded conditions this figure may fall to 15 bushels or less".[4]

[1] Ling Roth, "The Natives of Sarawak and British North Borneo," (based chiefly on the MSS. of the late Hugh Brooke Low, Sarawak Government Service), 1896, Vol. I, p. 421.
[2] H. W. Jack, "Rice in Malaya," Malayan Agricultural Journal, Vol. II, 1923, p. 115.
[3] J. A. Craig, "Dry Padi in Kelantan," Malayan Agricultural Journal, Vol. 21, 1933.
[4] Dr. E. R. Leach, "Some Aspects of Dry Rice Cultivation in North Burma and British Borneo," The Advancement of Science, Vol. VI, No. 21, 1949, p. 28.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

(*d*) Mr. Duncan J. de Soyza, in an article on hill *padi* cultivation in Ceylon, notes that yields of 15 to 30 bushels, and even above 50 bushels per acre, are not uncommon.[1]

(*e*) From very thorough investigations carried out among the Lamet of French Indo-China (shifting cultivators whose *padi* cult has many affinities with that of the Iban), Dr. K. G. Izikowitz calculated that the average yield (for an area of 10·5 hectares) was equal to 24 bushels per acre.[2]

(*f*) In his study of the agriculture of the Land Dayaks of Sarawak, Dr. W. R. Geddes made a detailed investigation of two dry *padi* farms; one was found to have produced an average yield of almost 32 bushels per acre, and the other only 7 bushels per acre.[3]

(*g*) Finally, let me quote from a valuable comparison of *padi* yields made available to me by the Agricultural Officer of the Third Division, Sarawak. The method employed here was the computation of an average from two test plots each 1/180th of an acre in area. The data made available to me are for the two seasons: 1948-49 and 1949-50, and the hill *padi* areas tested were predominantly in the lower and middle Rejang (i.e. Sarikei, Binatang and Kanowit). Results for seven different test areas are recorded, with yields per acre varying from about 31 bushels at one extreme to 7·5 bushels at the other, and a mean average of just over 15 bushels per acre.

227. In Table 21, all these comparative data have been summarized:

Table 21: Comparative Data on Yields from Dry Rice Cultivation

Reference	*Region*	*Yield in bushels per acre*	
		General Range	*General Average*
Jack	Malaya	18—43	
Craig	Kelantan, Malaya	Up to 43	27·5
Leach	North Burma	15 (or less) —40 (or more)	
de Soyza	Ceylon	15—50	
Izikowitz	French Indo-China		24·0
Geddes	First Division, Sarawak	7—32	
Agricultural Department	Third Division, Sarawak	7—31	15·0
Freeman	Kapit District, Sarawak	8—43	15·0

228. One important conclusion which the evidence of this Table supports is that the growing of hill *padi* by the method of shifting cultivation is characterized by wide variations in yield. Of this we can be quite sure. To estimate the general average yield per acre remains a difficult task, because of the very limited nature of the evidence available. The Sarawak Department of Agriculture has suggested that "the average yield of hill/dry *padi* per acre in Sarawak probably is not more than 100 gantangs per acre at the most". This, I believe, at least for pioneer areas —like the Baleh—is an underestimate. Only under exceptionally adverse conditions would the general average fall as low as this figure of 12·5 bushels per acre. Despite the fact that 1949-50 was a very unfavourable season, the general

[1]Duncan J. de Soyza, "Hill Paddy Cultivation in Ceylon," Tropical Agriculturist, Vol 100, 1944.
[2]Dr. K. G. Izikowitz, "Lamet," 1951.
[3]Dr. W. R. Geddes, MSS., 1952.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

average for the 25 *bilek* families of Rumah Nyala was only just short of 15 bushels per acre. In normal years an increase on this figure of at least two or three bushels would be likely, and in exceptionally good seasons it is probable that a general average of 20 (and more) bushels per acre is not infrequently attained.

Consumption of Padi by the Bilek Family

229. Having surveyed some of the main features of *padi* production among the Iban, we now come to the complementary problem of consumption. What are the normal annual requirements, in terms of *padi*, of the average *bilek* family? Obtaining an accurate answer to this question is not easy, and much depends on the methods employed. It is clearly important, for example, that a sound estimate be based on detailed first-hand observations, and not on the casual opinions of informants on how much they think they eat. Again, as a point in procedure, it is essential to realize that in consumption, as in production, it is the *bilek* family which must be the starting point of our enquiry. In other words, the standard of living of individuals is directly related to that of their *bilek* families. When food is prepared, plates of rice—and of a relish (*engkayu*) of some kind, are placed on a mat in the centre of the *bilek*; around about sit the various members of the family each with his or her own plate. Each person is then served from the common pool, and as necessary the central plates are replenished from cooking pots at the fireside. This way of taking meals means that it is not normally possible for an investigator to obtain measurements of the amount eaten by each individual, for to attempt to do so would be an unwarrantable interference. Instead we adopted the method of selecting five different *bilek* families for special study. For each family the amount of rice (*brau*) cooked at each meal was carefully measured in advance, a count made of the number of diners at each meal, and then—at the end of the day—an estimate was taken of the quantity of rice left in the cooking pot. In this way it was possible to calculate the quantity of rice consumed by each *bilek* family—men, women and children—in one day. From this, an average figure was obtained for the amount consumed per day per individual member. It should be noted that this last figure is a general individual average, and ignores differences in age and sex. However, for the five *bilek* families studied, the proportion of adults (62%) to children (38%), closely paralleled the proportion of adults (63·5%) to children (36·5%) in Iban society at large, and in this respect our sample is a typical one. (The general percentages for adults and children are based on my census of the three long-houses: Rumah Nyala, Rumah Tungku and Rumah Sibat, a child being defined as any individual 14 years of age or under).

230. Investigation by this method gave an average consumption per person per day of just over *one pint of brau*. (*Brau* is rice which has been pounded to remove the hull, and winnowed ready for cooking). This equals an annual consumption per person of approximately 47 gantangs of hulled rice, or 88·4 gantangs of *padi*. (It is assumed that two gantangs of *padi*, when pounded, produce one and one-sixteenth gantangs of *brau*; this proportion was accepted following a series of test poundings of small quantities of Iban *padi*).

231. It is clear that to obtain fully reliable figures for *padi* consumption extensive data would have to be assembled so that standard statistical checks could be applied. For our present purposes however, the general averages quoted above (though admittedly based on a small sample) would seem to be reasonably

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511 accurate. Further, it is possible to check this average of about 88-89 gantangs of *padi* per person per year against the results reached by other investigators. First let me quote the conclusions of Dr. H. W. Jack, who reckons that among the Malays consumption of hulled rice (in gantangs per annum) at the following rates: "30 gantangs per child under 15, 60 gantangs per man of working age, and 50 gantangs for women and old men".[1] By applying these consumption rates to Rumah Nyala a simple comparison can be made. In May, 1950, the age composition of Rumah Nyala was as follows:

(*a*)	men of working age (i.e. 15-65 years of age) ..	38
(*b*)	old men (i.e. over 65 years of age)	3
(*c*)	women (i.e. 15 years of age and over)	52
(*d*)	children (i.e. under 15 years of age)	40

(Seven infants of under one year are omitted).

When Dr. Jack's consumption rates are applied to these age groups the annual average per head (for the whole community of 133 persons) is 46·8 gantangs of *brau*, or 88·1 gantangs of *padi*. These figures, it will be noted, are extremely close to those derived from my sample of five *bilek* families.

232. Dr. Geddes,[2] in his study of the Land Dayaks of Sarawak, stresses the point that "the standard of living of individual persons cannot be effectively determined directly, but must be deduced from that of their households". He states that a household of seven (three of whom are adults) requires 639 gantangs of *padi* per year. This would mean an annual consumption of about 91 gantangs of *padi* per person. This, again, is within a few per cent of my figure of 88-89 gantangs per head per year. The two other estimates of rice consumption available to me give appreciably lower figures. Pelzer[3] quotes an analysis of the diet of two indigenous villages in the Lampong District of Sumatra, where the average daily consumption of rice per head is equal to about 80 gantangs of *padi* per year. Izikowitz's[4] figure of ·55 kg. of unhusked rice per day per person for the Lamet, is equivalent to a consumption of between 72 and 73 gantangs of *padi* per annum.

233. In contrast, the Department of Agriculture, Sarawak, has suggested a food requirement per head per year of 114 gantangs, so that "570 gantangs *padi* is necessary for the average family (or door) of 5 persons for a year".[5] There can be little doubt that—for the Iban, at least—this is an over-estimate. It is based on a ration of 3/4 kati (1 kati equals 1 1/3 lbs.) of rice per head per day. This is a "reasonable ration" for manual workers (it is the same as that reckoned by Dr. Jack to be required by working men), but it is not reasonable to assume that all the members of a population consume rice at this rate. Allowances must be made for the young and the aged, and for the fact that women do not eat quite as much as men. The only really satisfactory method would be a detailed investigation of the diet of many households (enough to comprise a sound sample) over a protracted period of time. From the limited data at present available, it seems that—for the Iban—an annual requirement of about 88-89 gantangs of *padi* per head, is a fairly accurate estimate. It must be stressed however that this is a general average (based on the proportion of 3 adults to 2 children) and

[1] H. W. Jack, "Rice in Malaya," Malayan Agricultural Journal, Vol. 11, 1923, p. 165.
[2] Dr. W. R. Geddes, MSS., 1952.
[3] Dr. K. J. Pelzer, "Pioneer Settlements in the Asiatic Tropics," 1945, p. 264.
[4] Dr. K. G. Izikowitz, "Lamet," 1951.
[5] Sarawak Department of Agriculture, Annual Report for 1948, p. 47.

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should be used with caution when small and variable units, such as the Iban *bilek* family, are being discussed. To illustrate this let us examine the households of Gayar (No. 8) and Majau (No. 13), of Rumah Nyala, both of which have five members. Gayar's *bilek* contains two adult males, two adult females and a child of about six years; while Majau's family comprises a man and woman, two children (9 years and 3 years) and a baby that is still a suckling. If we accept Dr. Jack's estimates, Majau's family would need only about 320 gantangs of *padi* per year, while Gayar's household would require some 470 gantangs, or almost half as much again. This suggests that due allowance must be made for special features in the composition of individual *bilek* families.

Subsidiary Consumption

234. In addition to its basic needs in food, a household requires *padi* for a number of other purposes. First and foremost there is the seed (*benih*) which must be put aside for the next season's planting. We have seen that the average sowing rate (at Rumah Nyala) was 5¼ gantangs of *padi* per acre, so that a family of five members would require about 30 gantangs of *padi* seed. (What usually happens is that a family stores away a good deal more seed than it is likely to need. This is a safeguard against crop failure. Thus, in 1950, the *bilek* family of Kubu had 57 gantangs of *padi* seed, of 18 different varieties. When the success of the crop is assured, the residue of seed can then be eaten).

235. Many Iban families possess one or more dogs, which are used in the hunting of wild pigs and other game. On the whole these dogs are very indifferently cared for; few are fed properly and most of them are forced to slink and skulk about the long-house in search of scraps and left overs. An owner who looks after his dogs gives them a staple diet of boiled rice (*asi bubur*), and from Iban testimony and brief general observation, I estimate that the feeding of a dog is likely to cost between 30 and 35 gantangs of *padi* per year.

236. It is the ambition of every Iban family to build up a flourishing flock of fowls. Eggs are an essential ingredient of the standard offerings (*piring*) which accompany almost every Iban ritual; on important occasions fowls are used in making sacrifices, or in paying for services; the men are always on the watch for young birds that can be trained for cock-fighting. During the daylight hours, fowls are set free to seek food in the environs of the long-house, but this diet is always supplemented by a daily ration of *padi*. The number of fowls which a household can keep is dependent then on its *padi* stocks. A normal household is likely to expend at least from 40 to 50 gantangs of *padi* per annum on its fowls. It should be noted however that there is a good deal of variation in this matter, so that while penurious households are forced well below this level, successful farmers often devote a large part of their surplus to the rearing of chickens.

Padi Expended on Rituals

237. We finally come to the rather difficult task of estimating the average annual expenditure of *padi* on religious rituals, feasting and drinking. The first points to be made are that all the major rituals (e.g. all of the head-hunting and prestige *gawai*) are performed by individual *bilek* families and not by the long-house community as a whole, and further, that (with but rare exceptions) they are only staged when a *padi* surplus has been achieved. The holding of a major *gawai* is usually planned well in advance (i.e. by as much as one or two years), and those *bilek* families desiring to participate make a special effort to produce

the extra *padi*, etc. they will be needing. If they fail to do this they may be compelled to abandon, or to modify their plans, and this is no uncommon occurence. At every series of rituals which I attended, the crowded galleries of those who were holding *gawai* were interspersed with the unfrequented apartments of families lacking the means to compete with their neighbours. The average *bilek* family only performs major *gawai* at fairly rare intervals—say about once every eight to ten years; and poor or new households may go for even longer than this without large scale celebrations.

238. It is a great mistake to think of the Iban as engaging year after year in a succession of Gargantuan feasts and Bacchanalian carousals. This may be the extravagant consummation of which some dream, but it is nothing more than a dream. During the period of my observations at Rumah Nyala (1949-51), no major *gawai* were held—with the exception of a series of *gawai lumbong*—the obligatory last rites of the dead. The same applied to the neighbouring longhouses in the lower Sungai Sut. The end of the harvest was celebrated by the making of offerings and accompanied by the drinking of *tuak*—but these were very modest celebrations lasting for only part of one day. It is also important to realize that all the major *gawai* of the Iban are serious religious occasions. To call them "feasts", as has become the popular practice, is to invite misunderstanding of their significance. True enough, all large scale *gawai* are accompanied by much eating and drinking and a good deal of revelry, but this is always subservient to their primary purpose which is the invocation of gods so that certain definite advantages may be obtained.

239. In performing one of these major *gawai* a *bilek* family may use from 50 to 80 gantangs of *padi*—in making offerings, as food, and in brewing *tuak*. In addition there are various other expenses, some of which are usually met by the sale of *padi*. It is unlikely however, that a *bilek* family would expend more than 12-15 bushels of *padi* in the staging of a large scale *gawai*, such for example, as a *gawai kenyalang* or a *gawai ijok pumpong*. But, as already mentioned, the performance of major rituals is a rare event in the life of the average *bilek* family. Lesser rituals (e.g. *gawai bulu*, *gawai panggau*, *gawai sukat*, etc.) call for much smaller resources, and would involve the expenditure of only two or three bushels of *padi*. In the normal course of the year every *bilek* family requires a certain amount of *padi* for the offerings (*piring*) which accompany customary seasonal rituals. These are mainly associated with the rites of *padi* cultivation; but in addition there are occasional offerings which have to be made in treating the sick, in revoking the effects of a bad dream or evil omen, or in making propitious some journey or enterprise. In normal years not more than about 20 gantangs of *padi* need be expended in performing these recurrent and prescriptive rites, and this—I would suggest—is a reasonable miminum figure.

240. The amount of *tuak* (rice beer) prepared by a household in any one year depends on the kinds of rituals which it holds. For important *gawai* a family may make 40 or more gallons of *tuak*, from the glutinous rice (*padi pulut*) which has been especially grown for the occasion. During an ordinary year however, only a small quantity is needed for ritual purposes (i.e. for inclusion in *piring*, in pouring libations, etc.). In 1950, for example, some of the families of Rumah Nyala who had very poor crops, made only one or two gallons of *tuak*. Except in years when a good surplus has been obtained, few families would expend more than about 10 gantangs of *padi* on the brewing of *tuak*.

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241. In reading this summary of Iban modes of *padi* consumption it must be constantly borne in mind that we are dealing with what is primarily a subsistence economy. Year by year each *bilek* family is compelled to adapt its standard of living to its available resources of *padi*. In the event of a poor crop, a household will abandon any plans it may have had for the staging of a *gawai*, will cut down temporarily on its flock of chickens, only perform the bare minimum of seasonal rituals, and make but little *tuak*. To some extent this situation may be alleviated by the existence of cash crops such as rubber, or the availability of jungle produce (e.g. *rotan*, *getah*, *jelutong*, etc.) which may be gathered and marketed with Chinese traders. Furthermore, most Iban families possess property (in the form of gongs, jars, etc.) which, in emergency, can be exchanged for *padi*. When their crops fail, wealthy households are often prepared to sacrifice property in order to go on eating rice, but many—and especially the less well off—take to a diet of sago, eked out by other jungle foods.

Annual Requirements in Padi of the Average Bilek Family

242. We are now in a position to give a general estimate of the yearly requirements in *padi* of an average *bilek* family, of 5 members. It should be realized however, that what follows represents an estimate of the bare needs of an average household. Every *bilek* family hopes for a surplus over and above these bare requirements; but, as we shall see, in unfavourable years many households do not attain their minimum requirements. The general needs of the household we may list as follows:

(*a*)	*padi* required as seed for next season	30 gantangs
(*b*)	*padi* required as food for fowls	40 gantangs
(*c*)	*padi* required as dog food	30 gantangs
(*d*)	*padi* required for rituals, offerings, etc. ..	20 gantangs
(*e*)	*padi* required for *tuak*	10 gantangs

The food requirements of five people—accepting the average of 88 gantangs per head per annum—would be 440 gantangs. Thus, the total amount of *padi* needed by a household of five members would be 570 gantangs, or 114 gantangs per head per annum.[1]

243. This may be accepted as a general average, but once again, it is instructive to note the variations likely to occur, even with a family of only five persons. Let us take three examples from Rumah Nyala. Majau's family (No. 13, with a man, a woman, two children and a suckling) would require only 320 gantangs of *padi* as food, and a total of 450 gantangs. Unyang's family (No. 18, with two women and three children) would need about 360 gantangs as food, and a total of 490 gantangs. Gayar's family (No. 8, with two men, two women and a child) would require 470 gantangs as food, and a total of 600 gantangs.

244. Let us now consider whether these various estimates of yearly requirements are consistent with our data on farm acreages and yields. We have estimated the average area farmed by a household of five members to be about 4 acres. Therefore, to attain a yearly requirement of 570 gantangs (the general estimate quoted in Para. 242 above) a yield of between 17 and 18 bushels per acre would be necessary. For Majau's *bilek* family a yield of only 14 bushels per acre would be required however; for Unyang's about 15 bushels per acre; and for Gayar's almost 19 bushels per acre. These figures, it will be seen, fall within the range of typical yields per acre recorded earlier in this report.

[1]N.B. This is considerably lower than the estimate of 940 gantangs per annum (for a family of 4) given by Mr. R. W. R. Miller ("Sarawak Gazette," 1950, p. 36).

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The Extent to which Iban Households Attain their Yearly Requirements of Padi

511 245. We are now faced by a further question. To what extent do Iban *bilek* families succeed in attaining their normal yearly requirements of *padi*? Our answer to this question can only be approximate, for in many cases it was not possible to procure more than a general estimate of total yields. However even an approximate assessment is of interest. It will be remembered that there were in Rumah Nyala, 25 different *bilek* families. If we accept a normal requirement of 114 gantangs per head per annum, the total yields for the 1949-50 season of the 25 households of Rumah Nyala may be grouped as follows. Allowance has been made, where necessary, for men absent on journeys.

Table 22: Padi Yields of 25 Bilek Families of Rumah Nyala (during 1949-50 Season) in Relation to Their Normal Requirements

Padi yield as a percentage of normal requirements	*No. of households*	*Percentage of total number of households in community*
More than required	8	32%
76%—100%	6	24%
51%—75%	6	24%
26%—50%	4	16%
Under 25%	1	4%

246. At first sight, the fact that only about one third of *bilek* families managed to secure their normal requirements seems surprising, but it must be remembered that the 1949-50 season was an exceptionally bad one. Heavy rain during August and September, 1949 seriously interfered with the firing of the farms, and in not one case was there a successful burn; some families were only able to cultivate about 60% of the area they had felled, and for the community as a whole the figure was about 80%. According to the people of Rumah Nyala, the 1949-50 season was the worst which they had encountered for many years. Nonetheless, it seems probable that even in normal years it is not uncommon for a minor percentage of households to fall below the ordinary level of subsistence as we have defined it. In the absence of reliable data we can do no more than make an informed guess. From my discussions with Iban informants, I would expect that in normal years from 70% to 80% of *bilek* families would attain their ordinary requirements, and that in favourable seasons virtually all would be successful. This however is a question on which further research is needed. Nevertheless, sufficient evidence is available for us to reach the broad conclusion that the subsistence economy of the Iban is one of scarcity rather than plenty. There are probably few, if any, Iban families which have not, at some time or other, found themselves in straitened circumstances with insufficient *padi* for their barest needs.

534 247. What does an Iban family do when it finds itself in such a situation? If 454 there is only a small deficit, a family may elect to part with one or more of its 556 gongs (or some other kind of property) in exchange for *padi*. Brass gongs (*tawak*, 437 *bebendai*, etc.) are the principal form of property in which the Iban invest their savings. These gongs have the great advantage of being untouched by the Borneo climate and are virtually indestructible; further they have marked prestige value, and can be displayed and used on ceremonial occasions. In good

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years, when a surplus of *padi* has been gained, it is exchanged for gongs, which are then available in years of shortage. Each season, some families succeed in producing a surplus, while others find themselves with a deficit; and so, year by year in an area like the Baleh, scores of different families exchange gongs for *padi*, or *padi* for gongs. Jars (*tajau*), though to a much lesser extent, are used in the same way. Again, money—obtained from the marketing of jungle produce—is often used to purchase *padi*; and of recent years, cash crops—particularly rubber—have become increasingly important.

248. It frequently happens, however that a family is not prepared to part with any of its gongs or other property. In these circumstances recourse is had to the traditional scarcity food of the Iban: sago. Most *bilek* families possess small plantations of sago palms, specially planted as a scarcity crop (Plate 5), for no Iban relishes *mulong* (as prepared sago is called), and it is only eaten under duress when *padi* cannot be easily procured. When planted sago is not available, the men set off to scour the jungle for the wild palms, from which the nomadic tribes of Borneo—such as the Punans—habitually obtain the sago which is the main item of their diet.

Rubber as a Cash Crop, and its Relation to Padi Cultivation

249. We have so far been discussing the traditional ways of coping with a *padi* shortage, but to-day, in many parts of the Baleh, the introduction of rubber as a cash crop has drastically changed the situation. As far as I have been able to determine, rubber was first introduced into the Kapit District in 1907 when a prison gang planted some 200 young trees.[1] By 1913, both rubber and cassava were being grown by Iban communities living in the vicinity of Kapit.[2] During the years of disaffection, from 1914-1919, it is probable that little or no rubber was planted in the Baleh region itself, but soon after the Iban were permitted to re-occupy the river, in 1922, planting was resumed. At Rumah Nyala in the Sungai Sut, the first trees to be planted date from about 1924. Some years after this a strange series of events occurred. The story spread, among the Iban, that rubber trees had a strongly deleterious effect on their *padi*; the spirit of the rubber trees (*antu kubal*), so it was said, was able to attack and drive away the *padi* spirits (*antu padi*). Many Iban came to believe this extraordinary tale (which had sprung from a dream), and so deeply that they were persuaded to cut down the rubber trees they had planted. To-day they bewail their stupidity, but because of it, many Iban families in the Baleh region are now without productive rubber plantations.[3]

250. At Rumah Nyala, in 1950, all but four of the twenty-five *bilek* families possessed small rubber plantations. Rubber is prepared for the market in small sheets (*kepin*), and it is convenient therefore, to discuss *bilek* family plantations in terms of the number of sheets which they are capable of yielding when being fully worked. Measurement of some 50 typical *kepin* showed an average weight per sheet of 1·7 katis. (1 kati equals 1 1/3rd lbs.). The family holdings of Rumah Nyala are summarized in Table 23.

[1] "Sarawak Gazette," 1908, p. 13.
[2] "Sarawak Gazette," 1913, p. 118.
[3] This story appears to have had a wide circulation in Sarawak, for it was also encountered by Dr. W. R. Geddes among the Land Dayaks of the First Division.

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Table 23: Bilek Family Rubber Plantations at Rumah Nyala, Sungai Sut, in 1950

Daily yield (in sheets) when plantation is being fully worked	*No. of bilek families*
2	3
3	4
4	2
5	6
6	3
10	1
12	1
15	1

Three *bilek* families, it will be seen, were in a much better position than the others, and these—as might be expected—were all founding members of Rumah Nyala. Parts of the plantations of these families were tapped on a share-cropping basis by the members of other households, the workers taking half of what they produced and leaving half for the owners. In particular, this kind of work was undertaken by members of the four *bilek* families that were without plantations of their own. Men from other long-houses also engaged in this work.

251. Under favourable conditions one man can produce about seven or eight sheets (*kepin*) of rubber per working day; but when allowance has been made for wet days, the daily output drops to about three or four sheets. Observations carried out in the Second Division showed an output per working day of about 13 katis, but a general average of only about 7·5 katis per day (when reductions for time lost, etc. had been made). At Rumah Nyala, the overall average per man-day was about 4 to 5 katis.

252. In September, 1949, rubber was being sold at the Kapit bazaar for 30 cents per kati, while rice (*brau*) was available at $1·80 per gantang; thus the production of about 5 katis of rubber per day would provide adequately for the normal requirements in rice of a *bilek* family of 5 or 6 persons. Under these conditions, rubber provided a very good safeguard for households faced with a *padi* shortage from their farms, but it did not seriously compete with farming as a main activity. As we have seen, 15 bushels per acre is a very normal yield for hill *padi*; assuming an expenditure of 60 man-days per acre to produce such a crop (c.f. Para. 201-204), and with rice (*brau*) valued at $1·80 per gantang, the return per day worked would be about $2. This compares favourably with the $1·50 per day (approximately) to be earned from rubber.

253. With the rubber boom of 1950 this balance was completely disturbed. In September, 1950 (one year after the period we have just been discussing), Chinese traders were travelling all the rivers of the Baleh region in search of Iban rubber, and the price offered at Rumah Nyala was $1·50 per kati. Accepting an average daily output per worker of 5 katis, in September, 1950, the production of rubber had become a pursuit at least three times more profitable than the production of *padi*. Hulled rice (*brau*) had risen in price to about $2 per gantang. Under these conditions it is difficult to understand, if one is thinking purely in terms of immediate profit and loss, why farming was not abandoned in favour of full-time rubber production. In the Saribas District of the Second Division,

indeed, there was a marked tendency in this direction. At Gansurai, a Dayak long-house on the banks of the Layar River, for example, 6 of the 19 *bilek* families did not grow any *padi* during the 1950-51 season, and were relying entirely on imported rice which they were able to purchase with money obtained from the sale of rubber. This was no great difficulty. One of the *bilek* families of Gansurai, employed 11 Malays on a share-cropping basis, and in April, 1951, with rubber at $1·15 per kati, the monthly income of this family was about $1,400.

254. At Rumah Nyala, the rubber boom also made itself felt, but not to the extent of any household appreciably reducing the size of its farm. In many cases, however, less than normal attention was paid to farming so that more time would be available for tapping rubber. Unfortunately, I was not able to remain at Rumah Nyala to guage the possible effects of this tendency upon the yields obtained at the 1951 harvest. The reasons why the rubber boom had not, by early 1951, seriously affected *padi* farming in the Baleh region are numerous. First, many families did not possess sufficient rubber to furnish their minimum needs. Further, the Iban did not analyze the changed situation in purely economic terms; their reaction was to continue with the cultivation of *padi*, and to reap what profit they could from rubber in the time left to them. (Towards the end of 1950, for example, many young men elected to stay at home and tap rubber rather than go on a *bejalai*). For this, they had a number of sound arguments. One element of great importance is the fact that to Iban palates their own hill rice is immensely preferable to the polished rice which is all they can purchase from the local bazaars. Anyone who has eaten hand-pounded, hill rice will appreciate this point, for hill rice of good quality has a delicious nutty flavour, which makes ordinary white rice seem insipid and savourless.[1] Again, from past experience, the Iban knew how risky it is to rely on supplies of imported rice; and here, certainly, they were on firm ground. Finally, as we have seen, the protracted work which accompanies the cultivation of rice is principally the duty of women; in 1950, there was a marked tendency for the general management of the farm to be handed over to the women of a family, while the men lived at the long-house and devoted their time to tapping rubber. In February, 1951, when I left Rumah Nyala, it had already been decided that during the coming season all *bilek* families would farm secondary jungle in the environs of the main long-house, and that after the harvest had been reaped (i.e. in 1952) all this land would be planted with rubber. Similar extensions of rubber plantations were taking place throughout the entire Baleh region.

255. As this brief survey shows, rubber production has become an extremely important element in Iban economy. At present it is still subsidiary to *padi* cultivation, and acts as a valuable safeguard against rice shortages which are liable to occur in unfavourable years. As long as rubber retains this subsidiary position it has a most useful fuction to serve, but there is always a danger that it may tend to surplant *padi* farming as a main activity, and this—in view of the world rice shortage—is a contingency against which active measures must be taken.

[1]Cf. Mr. Duncan J. de Soyza's statement: ". . . . some hill paddy varieties have outstanding qualities. The cooked rice of the scented varieties has a very agreeable odour and is pleasing to the palate. In eating qualities it is superior to wet rice." (Ref. Tropical Agriculturist, Vol. 100, pp. 211-218). Mr. de Soyza also points out that "from a nutritive point of view hill paddy rice is superior to wet land rice, being richer in protein compounds." (Cf. the findings of Prof. O. Kellner).

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Bilek Families that Produce a Surplus of Padi

511 256. We have briefly discussed what happens when a *bilek* family finds itself with insufficient *padi* for its normal needs; let us now consider those more fortunate households which succeed in producing a surplus. If it happens to be a year in which a high proportion of families have achieved bountiful crops it may well be decided to hold a series of rituals, and in this event almost all *bilek* families with a clear surplus will stage *gawai* of their own. After an adverse season, such as that of 1949-50, when only a very few families produce high 511 yields, this is not feasible, and instead, each household gradually disposes of its 203 surplus, either to other Iban or to Chinese traders. Each year as the time of harvest approaches, great interest is taken in the crops other families have produced, and even before the final storing (*besimpan*) takes place the identity of those *bileks* with an abundance of *padi* is well known throughout the long-house. Before long the news travels to neighbouring communities, and within a [602] few weeks of the harvest a *bilek* family with a large surplus is likely to find itself the quarry of kith and kin who have suffered poor crops and are seeking additional *padi* to meet their requirements. Sometimes importunate relatives will come from long-houses twenty and more miles away in an attempt to acquire grain, or to '*madi*'—as the Iban term it.

432 257. Interestingly enough, two quite distinct standards are observed in 435 disposing of *padi*: one for kin and other Iban, and another for Chinese or Malay traders. Occasionally grain is given to close relatives, but always on the general understanding that it will be repaid when conditions permit. To give *padi* in this way is—as the Iban put it—"equivalent to selling" ("*itong di jual*"). It is far more usual however, for a price to be charged, even to near kin. This price varies slightly from community to community, but at Rumah Nyala in 1950, it was $1 for 5 gantangs of *padi*, or one fifth of the ruling market price. To dispose of grain at this rate is to observe the *adat lama*—the old custom of the Iban. If *padi* was sold to Chinese traders the price of $1 per gantang was followed. In contrast, husked rice (*brau*) was sold to Iban and Chinese alike at the standard market price (in 1950) of $2 per gantang.

258. To illustrate the kind of transactions which occur let us take the example of Bangi's household, which, in 1950, achieved a surplus of 430 gantangs of *padi*. By February, 1951, Rebut—Bangi's son—had disposed of some 425 gantangs of grain, partly as *padi* and partly as *brau* (i.e. rice from which the hull has been removed). The main transactions are shown below:

Surplus sold as padi:

(*a*) 90 gantangs sold to other Iban at the rate of $1 for 5 gantangs. The buyers included five other *bilek* families of Rumah Nyala, and Rebut's brother-in-law, from a neighbouring long-house.

(*b*) 75 gantangs exchanged with an Iban from another long-house for a large *bidai* mat.

(*c*) 90 gantangs given to a Chinese trader of Kapit in part payment for a brass gong, or *tawak*.

Surplus sold as brau:

(*d*) 81 gantangs sold to other Iban at the rate of $2 per gantang. The buyers included ten other *bilek* families of Rumah Nyala, one of them being the family of Bangi's brother.

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(*e*) 7 gantangs sold to a Chinese trader at Kapit, at the reduced price of $1·80 per gantang, in part payment of money owing on a shot-gun.

(*f*) 3 gantangs exchanged with a Chinese trader of Kapit for a small *tajau*, or jar.

259. It is instructive to note the interesting compromise which Rebut struck when faced with conflicting modes of economic behaviour. If he had attempted to dispose of all his surplus grain at the ruling market prices (and he could have done this if he had wanted to), he would have been strongly denounced by other members of his long-house as a grasping individual who had forsaken the traditional ways of the Iban. Besides exciting this obloquy, he would have sacrificed the right to look for assistance from other families, when his own household stood in need of it. On the other hand the temptation to desert the *adat lama*, and seek the maximum profit open to him was a strong one. Rebut solved his dilemma by selling *padi* at the low, customary rate, and his *brau* at the market price. The implication of this arrangement was that a high price was justified because buyers of *brau* were also paying for the labour expended (by Rebut's family) in husking the *padi*. Rebut had no difficulty in disposing of the *brau* he prepared for sale, but there was a general feeling in the long-house that his stratagem was a shabby one. The old custom—it was said—would soon be dead.

A Summary of the Economics of Four Bilek Family Farms

260. To conclude this section on the economics of hill *padi* cultivation, I propose to present the data obtained from a study of the farms of four *bilek* families of Rumah Nyala. In each case I was able to make detailed measurements of the yields of these households, and their farms were among those selected for special study. For only one farm (that of Kubu) was I able to make a rough survey; the other acreages are estimates only. Again special mention should be made of the fact that Bangi's household farmed in two sections. Bangi, her son Rebut, his wife and their two children had their farm in the Sungai Nyunggau; while Bangi's other son Usah, his wife and son, managed another farm in the Sungai Luba. These two brothers were still members of the same *bilek* family, and all the *padi* which they produced was jointly owned; however the family showed clear signs of being on the verge of partition, and for our present purposes, I have taken Rebut's farm as a separate unit. It should be noted that the four *bilek* families we have selected were among the more efficient cultivators of *padi* at Rumah Nyala, and that Rebut had outstandingly the best yield in the whole community. All data are for the poor season of 1949-50. We may say then, that the data recorded for these four households are representative of the results achieved—under worse than average conditions—by competent cultivators of hill *padi*.

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Table 24: *Summary of the Economics of Four Bilek Families of Rumah Nyala during the Season of* 1949–50

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	Bilek No. 5 pun bilek: Kamba[1]	*Bilek No. 22 pun bilek: Kubu*	*Bilek No. 20 pun bilek: Sulan*	*Bilek No. 1a pun bilek: Bangi, and Rebut*
Number in *bilek* family	8	6	5	5
Number in labour team (15 yrs. and over)	4	4	4	3
Area of farm in acres (i.e. area under *padi*)	6½	5 7/16	4¾	5
Acreage per head (i.e. under *padi*)	0·8	0·9	0·9	1·0
Total yield of *padi* (gantangs) ..	710	639	620	960
Yield of *padi* per acre (gantangs)	109·2	117·5	130·5	192·0
Yield of *padi* per head (gantangs)	88·7	106·5	124·0	192·0
Return on seed sown (reckoned at 5·7 g. per acre)	×19·1	×20·6	×22·9	×33·7
Yield as a percentage of normal requirements (i.e. 114 gantangs *padi* per head per annum) ..	77·8%	93·4%	108·7%	168·4%
Total value of crop (reckoned at rate of $2 per gantang of *brau*)	$754 *or* £87.19.4	$680 *or* £79.6.8	$658 *or* £76.15.4	$1,020 *or* £119.0.0
Amount produced per head of labour team)	$188·5 *or* £21.19.10	$170 *or* £19.16.8	$164·5 *or* £19.3.10	$340 *or* £39.13.4
Return per man-day (reckoning 60 man-days per acre)[2] ..	$1·93	$2·09	$2·30	$3·40

[1] Two adult males, who were absent on journeys, are omitted.

[2] The Sarawak dollar is valued at two shillings and four pence, sterling.

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Part V

IBAN METHODS OF LAND USAGE

Introduction

261. In their natural state the hills of the Baleh region (i.e. up to about 1,000 feet) are covered with tropical, lowland, evergreen rain-forest. It is with this kind of forest that we shall be dealing in discussing land usage, for nowhere in the Baleh did I encounter Iban farming ridges more than 1,000 feet in height, though many farm clearings approached to within one or two hundred feet of this level. Prior to 1880, the forests over almost the entire Baleh basin were primeval.[1] To the Iban virgin jungle is the most highly valued of all resources: by felling it, rights over land are acquired, and, if weather conditions be favourable, virgin land yields crops of exceptional abundance for two years in succession. The "rich, untouched vegetation" of the Baleh was, to the Iban, the most inviting of prizes, and desire to exploit it was the over-ruling incentive of their advance and an important motive in prompting their fierce attacks on alien tribes that stood in the way. Head-hunting and a craving for virgin land went hand in hand. During the past eighty years, hundreds of thousands of acres have been felled and farmed, so that to-day aerial photographs of the Baleh show complex mosaics in which remaining enclaves of virgin forest are surrounded and interspersed with secondary jungle at many different stages of regeneration.

Iban Terminology for the Main Stages of Land Usage

262. Every land usage cycle begins with the felling of an area of primeval forest—the area felled varying from about three to eight acres according to the size of the *bilek* family concerned. For the primeval forest and the various types of secondary growth which result from the cultivation sequences that follow its felling, the Iban have a special set of terms. These terms conveniently summarize the main stages in land usage. Briefly they are as follows:

(*a*) The general term for primeval jungle is *kampong*, but it is commonly qualified—as in the phrases *kampong dalam* (lit. deep jungle), and *kampong amat* (lit. true jungle)—to signify that it has never before been felled.

(*b*) After felling the *kampong* is fired, and when this stage is reached, the farm land is referred to as *tegalan*. *Padi* is dibbled in betwixt and between the charred remains of the fallen trees, carefully tended throughout its growing period, and finally reaped. The stubble that remains when the harvest is over (i.e. in about April) is the *jerami*. Within a few months there is robust regeneration accompanied by coppice growth; in fact, it begins at the end of the weeding (i.e. early in January), so that by August the farm is covered with a dense scrub several feet in height. This scrub—the next important stage to be distinguished—is called *krukoh*; and if it is scrub that has resulted from the felling the year before of

[1] According to Iban informants there were a few limited areas of secondary jungle which had resulted from the activities of the Lugat. The Lugat were a tribe (allied to the Kajang peoples of the upper Rejang) who formerly occupied the Baleh, but were driven out by Iban attacks.

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virgin forest, it is called *krukoh kampong*. It is normal Iban practice to slash this *krukoh kampong*, fire it, and farm the land two years in succession.[1]

(*c*) When *krukoh kampong* land is farmed, the subsequent regeneration is markedly less vigorous, and the plant composition of the resultant scrub is distinctly changed in character. This scrub—the outcome of cultivating land for two years in succession—is called *pangkal*; and if it has originated from *krukoh kampong*, it is called *pangkal kampong*. The farming of *pangkal kampong* occurs in a limited number of cases, but nowhere did I encounter, or hear reports of land being worked for four years in succession.

(*d*) If the *krukoh* scrub that springs up after the felling and firing of *kampong* is not farmed, but allowed to lie fallow for a year, it then becomes *dijap*. Several different kinds of *dijap* are distinguished according to the duration—in years—of the fallow period. For example, *dijap se taun* is *dijap* resulting from one year's fallow; *dijap dua taun* is *dijap* resulting from two years' fallow, and so on. *Dijap* may also result from land being farmed for two years in succession and then being left fallow for one or more years before re-use; in this instance it is known as *dijap krukoh kampong*. Again, *dijap pangkal kampong* is the growth which results when land is cultivated during three successive seasons and then left fallow for one or more years. *Dijap* is frequently felled and farmed—but never for two years running.

(*e*) After about five or six years, *dijap* (or the growth that follows the farming of *dijap*), changes from straggling thicket to well established secondary jungle; and when this stage is reached it is called *damun*. The point at which young secondary growth ceases to be *dijap* and becomes *damun* cannot be fixed with any exactitude. The distinction is an indefinite one, and I have heard growth on the borderline, referred to by both terms. Perhaps the difference is best marked by the practical test that whereas it is customary to clear *dijap* with a heavy bush-knife (*duku*), an axe (*kapak*) is used to fell *damun*. In general, the *damun* stage is reached after about five years, though a good deal depends on the usage to which the land has been submitted prior to its being allowed to lie fallow. Thus, if *kampong* land is felled and farmed only once, and then allowed to lie fallow, there is rapid and healthy regeneration; while in the case of land farmed two or three times in succession, or within a brief span of years, regeneration is retarded and much less vigorous. *Damun* can result from any of the types of usage listed in (*a*)—(*d*) above, that is: from *kampong*, *krukoh kampong*, *pangkal kampong*, *dijap kampong* and *dijap krukoh kampong*; and in each case it is different in character. Furthermore, *damun* is a general term applied to any kind of secondary jungle—from about five to twenty years of age and over; in this sense it is commonly used to describe any land over which customary rights of tenure have been acquired. When *damun* has reached maturity it is then frequently

[1]Cf. Howell and Bailey ("A Sea Dyak Dictionary," 1900, p. 70): "Kakah, s.—last year's stubble farmed this year; v. to farm last year's stubble." (This is the dialectal form of the Second Division).

Note: It should be noted that in this report we are discussing the terms used in the Baleh region. The same terms are employed by other Ulu Ai Iban, but different usages are encountered among the Iban of other parts of Sarawak. For example, Mr. A. R. Snelus noted in 1949 that "the term *damun* . . . . is seldom now heard and has been commonly replaced by the Malay word *'jerami'* amongst the Lemanaks and Layars of the Sarikei district," and further that "the word *tenuda* is commonly used in application to *all* stages of secondary growth to connote merely *any* land over which customary rights have been acquired through original felling of the virgin jungle for the purposes of farming *padi*." It is clear that in assessing the analysis presented in this report, due allowance must be made for differences in terminology from district to district and from tribe to tribe.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

referred to as *pengerang*. Once again, no precise definition is possible; *pengerang* has the general meaning of "old secondary jungle", but it is the height and size of the trees and not the length of the fallow period which is the accepted criterion. The time taken for *damun* to reach the required level of maturity varies considerably, for *damun* may result from any one of a number of different land usage sequences, each of which produces a distinctive type of regenerative growth. As far as I was able to determine (i.e. by reckoning, with the aid of informants, the number of farming seasons that had elapsed since an area of secondary jungle was last felled), *damun* reaches the *pengerang* stage after a period of growth ranging from twenty to thirty years. After a lapse of anything from ten to thirty or more years, *damun* land is brought back into use.

(*f*) The scrub that grows up during the three or four months following the taking of a crop from *damun* land is called *krukoh damun*. To slash and burn this *krukoh damun* (i.e. to cultivate secondary jungle for two years in succession) is generally recognized as inexpedient practice by the Iban; weed growth tends to be so vigorous as to outstrip all attempts to cope with it, and subsequent regeneration is so inhibited that the land stands in danger of suffering lasting harm and becoming derelict (*tanah kusi*). Nonetheless, the method is followed to a limited extent.

(*g*) The growth that emerges during the few months immediately succeeding the taking of a crop from *krukoh damun* land is known as *pangkal damun*. *Pangkal damun* is very rarely farmed, but during my two years in the Baleh I did encounter several instances—instances, that is, of secondary jungle (*damun*) being cultivated during three consecutive years.

(*h*) If *damun* be felled and farmed, and then permitted to lie fallow for one, two, three, or four years, the resultant scrub is termed *dijap damun*. The cultivation of *dijap damun* is fairly common.

(*i*) In due course, *dijap damun* (or the re-growth that follows the cultivation of *dijap damun*) reaches a stage of maturity entitling it to the general appellation of *damun*—i.e. well established secondary jungle. Strictly speaking, this kind of re-growth is *damun damun* (secondary jungle resulting from the cultivation of secondary jungle); this however, is a pedantic usage, and although I did hear it used by Iban in the course of a detailed explanation, it is customary to refer to all types of secondary jungle of whatever origin by the general and unqualified term: *damun*.

(*j*) It sometimes happens, because of heavy rain during the months of July, August and September, that the burn is a bad one, and so much so that part of the area which has been felled cannot be cultivated. In this event the land is allowed to revert to scrub for one year; it is then called *budu*. Two main kinds are distinguished: *budu kampong* and *budu damun*. After a year has elapsed the scrub is usually slashed, and a second attempt is made to fire it. This type of usage is only encountered after an exceptionally wet season however, and rarely comprises more than a minor percentage of the total area under cultivation.

263. It will be observed that the system of nomenclature recorded above follows a consistent pattern, but that while some terms (e.g. *kampong*, *krukoh kampong*, *pangkal kampong*) have a quite definite connotation, others (e.g. *dijap*, *damun*) are not rigidly defined and, in actual use, often overlap. This overlap seldom involves a period of more than two or three years however, and it becomes possible therefore to express the main distinctions recognized by the Iban in a simple form of notation. As the datum of this scale we have primeval

311 jungle, or *kampong*—which I propose to designate by the letter *K*. Accepting this
162 as a fixed starting-point, the subsequent usage to which any particular piece of *kampong* land is subjected may be denoted by affixing numbers that mark the years when cultivation occurred. For those years during which land lies fallow, no numbers are shown. Thus, *K*.1, records the first felling and firing of virgin jungle, while *K*.1-2, signifies that land (beginning as virgin jungle) has been cultivated for two years in succession, i.e. the farming of *krukoh kampong*. In Table 25, the main types of usage to be found among the Iban are listed. As already remarked, the term *damun* is applied to secondary growth after a fallow period of about five years has elapsed. In the normal course of events, however, the Iban do not bring *damun* back into use until it has reached an age of about twelve to fifteen years; in the examples given in Table 25, I have assumed a fallow period of fifteen years.[1] It will be noted that *damun* can be of several different types, depending on whether it has resulted from *kampong*, *krukoh kampong*, *pangkal kampong*, *dijap kampong*, or *dijap krukoh kampong*. (*Budu kampong*—i.e. jungle felled but not fired because of adverse weather conditions—is given the special notation of *Kb*).

Table 25: System of Notation Showing the Main Modes of Land Usage among the Iban of the Baleh Region

Type of Usage i.e. farming of	*Notation*
kampong	K 1
krukoh kampong	K 1-2
pangkal kampong	K 1-2-3
dijap kampong	K 1-3
	K 1-4
	K 1-5
dijap krukoh kampong ..	K 1-2-4
	K 1-2-5
	K 1-2-6
damun	K 1-16, etc.
	K 1-2-17, etc.
	K 1-2-3-18, etc.
	K 1-3-18, etc.
	K 1-2-4-19, etc.
krukoh damun	K 1-16-17, (and so on)
pangkal damun	K 1-16-17-18, (and so on)
dijap damun	K 1-16-18
	K 1-16-19
	K 1-16-20 (and so on)

Iban Modes of Land Usage in Pioneer Regions

311 264. We are now in a position, equipped with the necessary terms, to discuss the principal modes of land usage to be found among the Iban of the Baleh. As in previous sections of this report we shall be dealing, in the main, with observations made at Rumah Nyala, in the Sungai Sut. Despite the fact that Iban have been living in the valley of the Sut for something like fifty years, virgin jungle (*kampong*) was still being felled at Rumah Nyala in 1949-50, and I was fortunate in being able to witness many different types of land usage. Before beginning our survey there are several preliminary points which should be made. Iban methods

[1] In cases where the usage history of secondary jungle is not known, it may be designated by the letter 'D,' and subsequent usage indicated as for *kampong* (e.g. *krukoh damun* becomes D 1 — 2).

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

of land usage are complex. There is however, one general feature of especial significance: *a marked tendency (particularly when working virgin forest) to farm land for two years in succession, before letting it revert to secondary jungle.* I want to stress the prevalence of this practice from the outset, for it is of the greatest consequence that Government officers should be fully aware of its existence. In the past there seems to have been a general impression that after each harvest "a bush fallow period of from 12-15 years" was always observed before another crop was taken. When I first reported the existence of '*krukoh farming*' (i.e. the taking of two consecutive crops from the same piece of land), I was told, by officers of experience, that I was mistaken for it was well known that the Iban did not farm in this way. Yet, as we shall see, *krukoh* farming is a time-honoured Iban custom, which has had a most deleterious effect on hundreds of square miles of land—in the Third Division and many other parts of the territory of Sarawak.

The Predilection of the Iban for Virgin Jungle

265. Every land usage cycle begins with the felling of virgin jungle. During the past hundred years, many thousands of acres of primeval forest in the Rejang basin have been felled by Iban axes, and in the Baleh (and other similar pioneer areas) this onslaught is still going on. From the historical survey (presented in Part II of this report) of the Iban occupation of the Batang Rejang and its tributary rivers and streams, it emerges clearly that the Iban are a virile and resourceful people with an insatiable appetite for virgin land. The motives which prompt this appetite are many. Foremost is the knowledge that, given good weather, two and more crops of exceptional abundance may be harvested from an *umai kampong*. In their prayers (*sampi*) at the time of *pemanggol*, the Iban ask for:

"Land that is fat, fat in deep layers,
Luxuriant land, land that is fruitful,
Soil soft and fecund, land richly fertile;"

and they know that this is most likely to be found in tracts of *kampong*, on untouched slopes and terraces, where the humus of centuries lies thickly. The labour expended on an *umai kampong* is heavy, but it holds high promise of a surplus—a surplus that leads to property and prestige and all the other things most desired by Iban hearts.

266. By felling virgin forest a family obtains rights of ownership over land, rights of usufruct over the secondary jungle which in due course springs up; and by Iban *adat* these rights are permanently vested in the family and its heirs for as long as they elect to exercise them. Among shifting cultivators like the Iban land is of pre-eminent importance. Land is wealth, and upon its land holdings depend the prosperity and indeed, the very subsistence of a *bilek* family. Under these conditions access to virgin territory is a prerogative of the utmost consequence, for it presents a family with the opportunity to expand its wealth and attain a position of economic security. There is no need to wonder at the "land-rush" which marked the opening of the rich forest lands of the Baleh to Iban settlement. The well-being of many an Iban family springs from the privileged position it gained in that scramble.

267. The cultivation of virgin jungle brings innumerable minor advantages. Timber for building, for making canoes and a score of different implements, *rotan* for mats and baskets, palm fronds for thatching, iron-wood for roof shingles, resin for lighting, bark for *padi* bins—all these things lie close at hand. Indeed, the whole material culture of the Iban is based on the rain-forest, and in

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

areas where it has all been felled, the inhabitants find themselves in something of a plight, and long journeys have to be made to secure essential materials. Again, proximity to *kampong* ensures good and varied supplies of food—relishes to enliven the monotony of rice—for in the rain forest there are many opportunities for the hunter, and the streams are well stocked with fish.

The Krukoh Method

268. In the ordinary course of events the magico-religious rites that precede the felling of virgin jungle are performed in May or early June, and thereafter the cycle of cultivation follows the course already described. By the time reaping is completed, in the following March or April, regeneration of the forest has begun—young plants are springing up amid the *padi* stubble (*ierami*), and in the places least affected by the burn there is vigorous coppice growth. By July, a dense, though still diminutive scrub has established itself, and the farm has reached the *krukoh* stage.

269. When pioneering virgin territory it is normal Iban practice to slash this *krukoh* scrub in late July or early August, and after it has been fired, to sow the land once more with *padi*—that is, for a second year in succession. To farm in this way is to *ngrukoh*, or to be *krukoh*, and for the Iban it is the generally accepted mode of procedure when virgin jungle is being worked. In all the pioneer areas visited by me, *krukoh* farming was an established practice. The Iban themselves look upon it as completely normal, legitimate and economic; and from their testimony (I discussed this matter with scores of different informants), it is clear that *krukoh* farming has been a customary method of land usage for very many years. We need not be surprised at this state of affairs, for the practice of taking two or three consecutive crops from forest land has been reported from many other parts of South-East Asia.[1] Indeed it seems to be the prevalent system among shifting cultivators who have ample reserves of forest land at their disposal.

270. Among the Iban it does sometimes happen that the whole of a *kampong* farm is cultivated for two years in succession, but the much more common system is to re-plant only about one-half to two-thirds of the old farm, and to make up the desired acreage by felling a further area of virgin forest. All of the *bilek* families whose farms contained a substantial proportion of virgin jungle in 1949-50, adopted this method. Iban social organization being what it is, there are in this system of gradual advance certain definite advantages. The *bilek* family, which is the basic unit in Iban agriculture, is restricted in numbers, and many *bilek* families have only one male in their labour team. This means that for many families the task of felling three or four acres of virgin jungle is a formidable one, and difficult to maintain year after year. If, however, an initial area of say three acres is felled, and about half of it cultivated for two years in succession, then the family concerned has only to clear one to two acres of new jungle to bring its farm up to the required size By adopting this method a *bilek* family is able to farm well within its labour resources, and—at the same time—steadily to increase its land holdings.

271. A further advantage of this twofold system (from the Iban point of view) is that it lessens the chance of adverse weather interfering with the all-important

[1] For example, the cultivation of hill *padi* for two or more consecutive years has been reported in Malaya ("Padi Planting Methods in Malaya," M. A. J., Vol. 27, 1939, p. 58), in Sumatra (Dannhoff, 1940, p. 190), in the Philippines (Copeland, 1924, p. 22) and in Southern India (Ramiah, 1937, p. 12 and Fürer-Haimendorf, 1945, p. 78 seq.).

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burn. One of the hazards of farming virgin jungle is the Borneo climate. In the interior of Sarawak the rainfall is heavy, and falls of 160 inches and more per annum are not uncommon. In general, June and July are the driest months, but the rainfall is never really low. Records taken at Kapit, for the four years 1948-1951, show a monthly mean of 7·66 inches for June, and 8·17 inches for July. But this comparatively 'dry period' cannot be relied upon. In 1949, for example, 17·40 inches fell in May, 9·55 inches in June, 11·33 inches in July, 13·81 inches in August, and 12·76 inches in September; so that in this year there was no *kamarau*, or dry season. When adverse weather, such as this, is encountered, *kampong* farms suffer the most, for virgin forest needs a longer 'dry period' than any other type of jungle. In contrast, slashed *krukoh* requires the briefest dry spell of all, and will burn well after about five days of tropical sunshine. Even in adverse years a brief span of hot, dry weather often occurs, and *krukoh* land can often be successfully fired under conditions inadequate for the proper firing of an *umai kampong*.

272. But there are also several other factors which prompt Iban addiction to *krukoh* farming. Of most importance is the fact that, in general, the yield obtained from *krukoh* land is usually as good—and not infrequently better—than the yield taken from *kampong* land. The *krukoh* scrub which springs up after the first harvest is vigorous and contains few, if any, of the weeds that are the great bugbear of the Iban farmer. Thus, when *krukoh* has been slashed and burned, the land is still predominantly free from weed infestation, and at the same time there is sufficient richness in the soil to assure a second crop of excellent quality. A thoroughly burnt *krukoh* farm may well produce a heavier crop than a poorly fired *kampong* farm. The Iban are fully aware that good virgin land is capable, under favourable conditions, of producing two consecutive crops of the highest quality; and it is understandable—if not excusable—that they should yield to the temptation of trying to grow and reap them. That two successive and abundant crops can be harvested from *kampong* land is an undoubted fact, and it is important that this should be realized. It is also true that successive cropping inflicts permanent injury on the land; but cognizance of this consequence calls for an appreciation of principles of good husbandry which the Iban—alas—do not possess.

Iban Prodigality

273. Of the fact that the Iban are prodigal of the land there can be no doubt. They are, indeed, *mangeurs de bois*. It is not difficult to explain why they have become like this. Ever since they broke into the Rejang basin more than a hundred years ago, the Iban have had before them limitless tracts of virgin rain-forest. As the Tuan Muda (later Sir Charles Brooke—the Second Rajah of Sarawak) records in his journal of 1863, the middle Rejang and the Baleh were, at that time virtually uninhabited, and "clothed with rich, untouched vegetation"; with virgin forests that were "luxuriant to the wildest extent". From their numerous forays into Kayan country, the Iban well knew the vastness of these primeval forests—which were theirs for the taking. In these circumstances of super-abundance, the forest became an expendable resource. The impulse of the Iban was to extract all the wealth they could from the nearest virgin land, and then move on to fresh fields. (This also had the effect of opening up many new opportunities for head-hunting, the looting of enemy property, and the taking of slaves). In a sense, the Iban became semi-nomadic, for in one generation many *bilek* families moved forward, in stages, over fifty to a hundred miles of territory,

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devouring virgin jungle as they went. But unlike true nomads, the Iban did not retrace their steps; there was little inducement to return to inferior secondary jungle when virgin forests beckoned them on. It is clear that the *krukoh* method of farming has long been an essential feature of the Iban system of shifting cultivation, and that it has gone hand in hand with the remarkable advance of the Iban into the Rejang basin and beyond.

Other Advantages of the Krukoh Method

274. *Krukoh* farming is a method then, of quickly extracting the maximum return from virgin land. But it also has other advantages, in Iban eyes. One of these is the fact that, should it become necessary, a group of women can handle a *krukoh* farm without male assistance. In cases where the men of a *bilek* family are absent on journeys (*bejalai*), or prevented from working because of mishap or sickness, the women are able to meet these situations by re-cultivating (*bekrukoh*) the whole of their farm of the previous year. Again, in many long-house communities there are one or two *bilek* families without adult male members. Commonly they are the households of widows with young children. (Both at Rumah Nyala and Rumah Sibat there were families of this kind). These families, it will be clear, are not able to farm virgin jungle. Usually, by means of the *bedurok* system (Para. 183-190), they exchange their services (in slashing, etc.) with other households, and so manage to obtain male assistance in felling secondary jungle (e.g. *damun* or *dijap*). However there are sometimes difficulties in making this arrangement, and there is a tendency for families lacking mature males, to resort to *krukoh* (and *pangkal*) farming, rather more often than do normal households. Further, such families are often granted the temporary use of *krukoh*, *pangkal* or *dijap* growth, on land belonging to their kith or kin. This is also a common practice when a new *bilek* family joins a long-house. Such newcomers are liable to arrive after felling has begun, and they are almost always faced with the pressing task of having to build an apartment for themselves. In these circumstances they are often given the use of a tract of *krukoh* or *dijap* on land belonging to kinsfolk, for both these types of growth can be rapidly slashed towards the end of the felling period.

275. It may also be noted that the *krukoh* method makes it feasible for a *bilek* family to extend the area of its farm when this is required by special needs. When a *gawai* is to be staged, or when the important last rites for the dead have to be performed, extra supplies of *padi* are required. Usually a *bilek* family will attempt to secure this *padi* by increasing the area of its main farm, or by establishing a *tampas*, or subsidiary farm. Typically these extensions are in *krukoh* or *dijap*, for such young secondary growth can be speedily slashed at the end of the normal felling period, and yet be dry in time to permit a satisfactory burn. Although the *krukoh* method is primarily associated with the farming of virgin forest (*kampong*) it is also adopted—as we shall see—when mature secondary jungle (*damun*) is being worked.

276. From what has been said so far, it will be seen that the *krukoh* system is a customary method of land usage, which—from a short-term point of view—possesses a number of very real advantages. In drawing attention to these advantages, I am in no sense condoning the *krukoh* method, for it is in my opinion an entirely pernicious practice; but it is important—and especially for those concerned in designing remedial measures—to realize how prevalent the *krukoh* system is, and how deeply it is rooted in the traditional economy of the Iban people.

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The Pangkal Method

277. So far we have been devoting our attention to the practice of cultivating land during two consecutive seasons. It also happens—although to a very much lesser extent—that land is sometimes farmed for three years in succession. This, adopting the Iban word, we may term the *pangkal method*. The *pangkal* method is however, only very rarely followed, for when land is farmed for three years running the quality of the crop declines sharply; and the three successive firings result in a rapid regression from the climax type of vegetation, and weed infestation is severe. For these reasons *pangkal* land is only farmed in special circumstances. Sometimes—as happened at Rumah Nyala in 1949—a household decides to make up the acreage it requires by farming a small patch of *pangkal* land, and so avoid the necessity of having to move to another part of the long-house territory. It also occasionally happens that a strip of *pangkal* land is used to make a link between two sections of a farm. This sort of usage is necessitated by the ritual rule that an Iban *umai*, whatever its shape, must be all of a piece, for any break in the farm would form an obstacle in the path of the *padi* spirits (*antu padi*). Thus, at Rumah Nyala in 1950, a patch of *pangkal damun* (about three square chains in area) was used to join the upper and lower sections of a mixed farm. According to Iban informants, farms consisting wholly of *pangkal* land are never found, and certainly, I did not encounter any in the Baleh area. Further, they stressed the point that no family could hope to provide for its subsistence from *pangkal* land alone ("*Enda tau idup ari pangkal aja*").

The Dijap Method

278. Allied to the *krukoh* system is the common practice of cultivating young secondary growth of the kind known as *dijap*. As already noted, *dijap* is a general term and describes the scrub that results after fallow periods of one to three years. Moreover, *dijap* may be of several different types, depending on whether it has resulted from the previous cultivation of *kampong*, *krukoh kampong* or *damun*. For one type of *dijap*—of the kind known as *bali umbang*—the Iban have a special penchant. The phrase *bali umbang* is applied to *dijap* which has reached the stage when the chips of a previous felling have partially rotted away. (*Bali*—to change; *umbang*—any kind of refuse, and in this context the chips produced in tree felling). This stage is reached after a fallow period of about three years, and it is recognized by the Iban that *bali umbang* land is likely to produce especially good crops.

Summary of Principal Features of Iban Land Usage in Virgin Territory

279. Let us now attempt to summarize the principal features of Iban land usage in virgin territory. In every long-house community diverse methods are likely to be encountered. It sometimes happens that both the *krukoh* and the *dijap* stages are omitted, and occasionally ritual happenings, omens, dreams, etc. give rise to aberrant forms of usage; but these are all exceptions, and for pioneer communities as a whole it is possible to make the following generalizations:

(i) there is a strong tendency for virgin jungle (*kampong*) to be cultivated (at least in part) for two years in succession—this we may call *the krukoh kampong method*;

(ii) if this consecutive cropping does *not* occur, the land is almost always cultivated again after a fallow period of one to three years—*the dijap kampong method*;

(iii) it is not unusual for these two methods to be combined, so that land is

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311 cultivated three times in the first five to seven years following the felling of virgin jungle (*kampong*)—*the dijap krukoh kampong method.*

Methods of Usage in Secondary Jungle

280. In the majority of cases then, virgin jungle is cultivated two or three times before being left for a lengthy period to recuperate and become *damun*. The duration of the fallow period is chiefly determined by *the population-land balance* in the territory concerned; and this, of course, varies from long-house to long-house within each district, and from district to district within Sarawak. Among the Iban themselves it is recognized that the longer *damun* land is left, the better; and, in general, as protracted a fallow period as possible is observed.
[805] The Iban do not, of course, have any means of recording the passage of the years, and secondary jungle is thought of not so much in terms of its age, as in terms of its apparent maturity. What happens has already been described in discussing the *dampa* system (Para. 70-74). After all or most of the *kampong* in one section of the long-house territory has been worked out, the *dampa* group moves off to another part of the territory, and so on, until return has to be made to the original section. When this return is made the most mature *damun* available to each *bilek* family is felled first. Within each Iban community a variety of different usage
311 cycles are usually encountered, for all *bilek* families do not possess the same amount
471 of land. Rights over land are acquired by the felling of virgin jungle, and so the founding *bilek* families of a long-house community normally possess more than families that have arrived subsequently. Again, when a *bilek* family increases in size and partition occurs, there is then proportionately less land available to these two sections, than to a small family that does not so divide. It often happens therefore—even within the same long-house territory—that some families are forced to observe a considerably shorter usage cycle than others.

281. Similarly, some long-houses—as a whole—are a good deal better off than others. Some communities in the Baleh area have sufficient land for most of their *bilek* families to follow a grand cycle of cultivation of from 20 to 30 years' duration, and a few are even more favourably situated. There are others that have been forced down well below the 20-year limit. At Rumah Nyala, I encountered *damun* fallow periods ranging from 11 to about 20 years, with most cases falling between 13 and 16 years. It should be noted however, that these are only estimates based on Iban testimony, and further, that I was able to observe only a limited number of instances.

The Cultivation of Krukoh Damun and Dijap Damun

311 282. It is noteworthy that the felling of *damun* sometimes initiates a further period of intensive cultivation similar to that to which virgin land is submitted. Thus, during the two seasons I was at Rumah Nyala both *krukoh damun* and *dijap damun* were farmed. In 1949, three different families worked *krukoh damun*, the total area being about three acres, and the greatest area for any one family being one and a half acres. In the same year six families farmed *dijap damun*; the total area involved being very nearly ten acres. Of these six families, two were those of widows (i.e. households lacking male labour), and in three other cases *dijap damun* land was used as a *tampas*, or subsidiary farm. The remaining case was that of a *bilek* family with a sub-normal male at its head. The whole of this family's farm of about three acres was comprised of *dijap damun*. It was easily the worst farm at Rumah Nyala; weed infestation was exceptionally severe, choking

[See pp. 33-35, Cat. 116-Analyst]

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the *padi* on over two-thirds of the land, and only about seven bushels of grain were harvested. This particular piece of land had been subjected, by the end of 1950, to the following usage: *K*1-2-3-16-19; it was then profusely scattered with *lalang* (Imperata sp.) and other weeds, and had become virtually derelict. This is an extreme example, but it does demonstrate the lengths to which Iban prodigality can go. But before discussing the serious problems to which Iban methods give rise, let us turn to a more detailed examination of land usage as observed at Rumah Nyala.

Land Usage at Rumah Nyala

283. During the 1949-50 *padi* season, there were at Rumah Nyala, 26 main farms, or *umai*, while six *bilek* families had subsidiary farms, or *tampas*. The total acreage cleared was about 112 acres. The jungle covering these 112 acres immediately prior to felling or slashing (i.e. in May, 1949) was of the following types:

Table 26: Types of Jungle Cultivated at Rumah Nyala during the 1949-50 *Padi Season*

Type of jungle	*Type of Usage*	*Acreage*	*Percentage of total acreage cleared*
kampong	K 1	26½	23·5%
krukoh kampong	K 1–2	3	2·7%
pangkal kampong	K 1–2–3	2	1·7%
dijap krukoh kampong	K 1–2–5	7½	6·7%
damun	D 1	60½	54·0%
krukoh damun	D 1–2	3	2·7%
dijap damun	D 1–3, D 1–4	9½	8·7%

284. The data in this Table are based on detailed sketch maps or surveys. It will be noted that there were two main types of jungle being farmed: *kampong* (virgin jungle) and *damun* (old secondary jungle); but that young secondary growth (e.g. *krukoh*, *pangkal* and *dijap*), varying from a few months to about four years of age, accounted for an appreciable proportion (i.e. 22·5%) of the total. In 1950, I was not able to make a detailed survey of the *padi* land of Rumah Nyala, but all farms were examined and the following general estimate made:

Table 27: Types of Jungle Cultivated at Rumah Nyala during the 1950-51 *Padi Season*

kampong (virgin jungle)	9%
damun (old secondary jungle)	64%
young secondary growth (*budu*, *krukoh*, *pangkal* and *dijap*)	27%

285. In interpreting these data it must be borne in mind that the territory of Rumah Nyala—in the lower Sungai Sut—is at an intermediate state of development. In 1949, it contained both mature secondary jungle (i.e. *damun* dating from about 1924,) and a few remaining tracts of virgin jungle (*kampong*). This situation accounts for the widely varied types of jungle recorded in Tables 26-29. A newly founded community on the fringe of the Iban advance (e.g. Rumah Sipang, in the Entulu-Merirai) would be farming only *kampong*, *krukoh kampong* and *dijap kampong*; while communities lower down the Rejang (as in many parts

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311 of the Second Division, having long since felled the last of their virgin forest, are restricted to various types of secondary growth. At Rumah Nyala we are confronted with examples of land usage typical of both these stages of development.

The Varied Composition of Bilek Family Farms

286. Of particular interest—for both seasons under review—was the high proportion of farms containing more than one type of jungle. In 1949-50, there were six farms of mixed type (i.e. 23% of the total number of farms); and in 1950-51, the proportion rose to 62%, when there were 16 farms of mixed composition. To give an indication of the widely varied kinds of usage to be found in Iban *bilek* family farms, I have listed under separate headings all of the different arrangements recorded at Rumah Nyala during the two seasons 1949-50 and 1950-51.

Table 28: Types of Usage in Individual Bilek Family Farms of Rumah Nyala

	Types of jungle represented in main bilek family farm, or umai	*Incidence*	
		Season of 1949–50	*Season of 1950–51*
1.	(a) *kampong*	6	1
2.	(a) *kampong*		
	(b) *krukoh kampong*	—	5
3.	(a) *kampong*		
	(b) *budu kampong*		
	(c) *krukoh kampong*	—	1
4.	(a) *kampong*		
	(b) *krukoh kampong*		
	(c) *pangkal kampong*	1	—
5.	(a) *kampong*		
	(b) *dijap kampong*	—	1
6.	(a) *kampong*	1	—
	(b) *krukoh kampong*		
	(c) *damun*		
	(d) *krukoh damun*		
7.	(a) *kampong*		
	(b) *damun*		
	(c) *krukoh damun*	—	1
8.	(a) *kampong*		
	(b) *budu kampong*		
	(c) *krukoh kampong*		
	(d) *dijap kampong*		
	(e) *krukoh damun*		
	(f) *pangkal damun*		
	(g) *dijap damun*	—	1
9.	(a) *dijap krukoh kampong*	1	1
10.	(a) *damun*	11	8
11.	(a) *damun*		
	(b) *krukoh damun*	2	3
12.	(a) *damun*		
	(b) *budu damun*		
	(c) *krukoh damun*	—	1

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Table 28—continued

Types of jungle represented in main bilek family farm, or umai	Incidence	
	Season of 1949–50	Season of 1950–51
13. (a) *damun*		
(b) *dijap krukoh kampong* ..	1	—
14. (a) *damun*		
(b) *dijap damun*		
(c) *dijap krukoh damun*	1	—
15. (a) *dijap damun*	2	—
16. (a) *damun*		
(b) *krukoh damun*		
(c) *dijap damun*	—	1
17. (a) *damun*		
(b) *dijap kampong*	—	1
18. (a) *damun*		
(b) *dijap damun*	—	1
Totals	25	26

287. Subsidiary farms (*tampas*), for the two years under review, were of the following types:

Table 29: Types of Usage in Subsidiary Farms, or Tampas (of Rumah Nyala)

Types of jungle represented in subsidiary bilek family farm, or tampas	Incidence	
	Season of 1949–50	Season of 1950–51
1. (a) *budu kampong*	—	1
(b) *krukoh kampong*		
2. (a) *pangkal kampong*	1	—
3. (a) *damun*	2	1
4. (a) *krukoh damun*	—	1
5. (a) *dijap damun*	3	—
Totals	6	3

288. The facts summarized in these Tables are illustrative of many different facets of Iban land usage. What is of particular interest for our present analysis is the high proportion of *bilek* family farms in which some kind of young secondary growth appears. Thus in the 1949-50 season, nine different farms (i.e. 35% of the total number of *umai*) contained a piece of young secondary jungle; while in 1950-51, there were seventeen such farms (or 65% of the total). Six of the nine subsidiary farms, or *tampas* (ref. Table 29) were composed entirely of young secondary jungle.

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The Cultivation of Krukoh Kampong at Rumah Nyala

311 289. Let us now examine more closely the eight *bilek* families whose farms—in 1949-50—contained virgin jungle (*kampong*). To what extent did these eight families follow the *krukoh kampong method* in 1950-51? The answer is that *all* of them cultivated at least a part of their *kampong* land for two years in succession. Table 30 gives a detailed record of what happened.

Table 30: Bilek Families Following the Krukoh Kampong Method

Bilek family (name of pun bilek is given)	*Area of kampong land farmed in 1949–50, in acres*	*Approximate proportion of this land which was cultivated again, as krukoh kampong, in 1950–51*
No. 1a Bangi	1½	66%
No. 2 Dumo	2	50%
No. 3 Sube	3	66%
No. 4 Sating	4	50%
No. 5 Kamba	4½	66%
No. 6 Limau	3	66%
No. 17 Ja	4	75%
No. 22 Anjing	5	60%

It will be seen that in 1949-50 a total of about 26½ acres of *kampong* land was cleared and farmed at Rumah Nyala. I estimate that of this total area, about 16½ acres were slashed, and cultivated a second time. This estimate is only an approximate one, but we will not be far from the truth if we say that about 60% of *kampong* land was subjected to *krukoh* usage.

290. A further question now arises. When the *krukoh kampong* method is followed, what proportion of the total area of any one farm is made up of *krukoh kampong*? First, let it be said that nowhere in the Baleh did I encounter a farm comprised entirely of *krukoh kampong*. What then of the eight *bilek* families of Rumah Nyala that cultivated *krukoh kampong* land in 1950-51? Two of these were mixed farms in which *krukoh kampong* comprised only 10% and 20% respectively of the total area cultivated. The six other farms were made up partly of *krukoh kampong*, and partly of *kampong* (or *budu kampong*), and this—as already noted—is the customary method of advance when virgin territory is being farmed.[1] For these six farms the proportion of *krukoh kampong* ranged from about 50% to 66% of the total area farmed, the general average being about 60%. Observations made in other parts of the Baleh suggest that these proportions are typical of normal Iban practice.

The Cultivation of Krukoh Damun at Rumah Nyala

291. Let us next consider the even more improvident action of cultivating *krukoh damun*. In 1949-50, 16 of the 26 *bilek* families of Rumah Nyala contained *damun*. In 1950-51, 8 (or 50%) of these families cultivated part of their *damun* land (i.e. first cleared in 1949) for a second year in succession. As these figures indicate, the *krukoh damun* method of usage is practised markedly less—by those who are in a position to adopt it—than is the *krukoh kampong* method. Again, *krukoh damun* land rarely, if ever, comprises more than about one quarter of the total area of any one farm; whereas with *krukoh kampong* the proportion some-

[1]Cf. Allsop, F., "Shifting Cultivation in Burma," Proceedings of the Seventh Pacific Science Congress, vol. VI, 1953, p. 278: "When two crops are taken from each clearing, it is usual for each household to work one first-year and one second-year area together."

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times rises to about two-thirds. From a rapid survey of the farms of 1950-51, I would estimate that, on an average, *krukoh damun* comprised about one sixth of a farm's total area. This conclusion is supported by more exact data for the three *bilek* families that cultivated *krukoh damun* land in 1949-50:

Table 31: Cultivation of Krukoh Damun at Rumah Nyala in 1949-50

Name of bilek family	*Total area of farm, in acres*	*Area of krukoh damun, in acres*	*Krukoh damun as a percentage of the total farm*
No. 1a Bangi	5	½	10%
No. 7 Gadu	6½	1½	23%
No. 16 Jala	6	1	16%

Although the cultivation of *krukoh damun* is less prevalent than the cultivation of *krukoh kampong*, it is sufficiently widespread to be ranked as a customary method of land usage. Moreover, it deserves even greater condemnation than the *krukoh kampong* method, for its effect on the land is much more deleterious.

The Effects of Shifting Cultivation

292. Let us now turn to a survey of the effects of shifting cultivation. This is not a subject on which an anthropologist is entitled to speak with any authority, but in view of the great paucity of reliable information, a few general comments may be of interest to future investigators. Since the practice of shifting cultivation first came to the attention of scientific observers, judgements on its merits and demerits have been very mixed. Some have condemned the entire system out of hand—and with no small emotional fervour. But such attacks contribute little to our understanding. Of the fact that shifting cultivation often leads to deplorable results there can be no question; but this does not necessarily mean that the whole system is evil. In my opinion, *it is crucially important to recognize that within the general system of shifting cultivation there are both good and bad methods of land usage.* I also believe there can be little doubt but that the great bulk of the Iban population will continue to live by shifting cultivation for many years to come,[1] or at least in the immediately foreseeable future. It therefore becomes a matter of the utmost consequence to single out bad methods of land usage so that some attempt may be made to eradicate them; and, at the same time, to recognize and encourage methods which, if not commendable, are at least technically tolerable. With these objects in view, let us examine some of the effects of Iban methods of land usage.

Regeneration after the Cultivation of Virgin Jungle, or Kampong

293. The primeval forests of the Baleh region belong (up to 2,500 feet) to Burtt-Davy's 'tropical lowland evergreen rain-forest' formation;[2] this is sub-divided by Symington[3] into 'lowland dipterocarp forests (0-1,000 feet)' and 'hill dipterocarp forests (1,000-2,500 feet)'.[4] For the most part the Iban cultivator

[1] This view has now been accepted by the Department of Agriculture, Sarawak; ref. Annual Report for 1949, p. 4, para. 19.

[2] Burtt-Davy, J.: "The Classification of Tropical Woody Vegetation Types," Imperial Forestry Institute, Paper No. 13, 1938.

[3] Symington, C. F.: "Foresters' Manual of Dipterocarps," Malayan Forest Records, No. 16, 1941.

[4] Mr. H. G. Keith ("The Timbers of North Borneo," North Borneo Forest Records, No. 3, 1947), gives a good general description of the Borneo rain-forest. Its chief characteristics are

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137 confines his attention to hill-sides and ridges up to about 1,000 feet in height. The
311 felling and firing of virgin forest involves great havoc, but regeneration begins almost at once, and within a few weeks of the completion of the *padi* harvest, the land is often substantially covered with a vigorous growth of young plants. After three to four months, recuperation is well advanced, and the farm has then reached the *krukoh* stage. On 23rd August, 1949, together with Mr. B. E. Smythies (then Forestry Officer, Third Division), I visited a number of farms belonging to members of Pengulu Jenggut's house in the lower Batang Baleh. One of these farms was at the *krukoh kampong* stage, i.e. virgin forest had been felled about 13 months previously and one crop of *padi* had been taken from the land. Mr. Smythies has described this patch of *krukoh kampong* in these words: "There was ample and vigorous regeneration of tree species, both by coppice shoots and by growth from seedlings; a few ferns had sprung but no *lalang* or other weeds, and it was obvious that a complete cover of trees and shrubs would be established in another one or two years if left undisturbed".[1] It should be mentioned that this patch of *krukoh kampong* was within half a mile of a *lalang* infested area of derelict land (*tanah kusi*) presently to be discussed.

294. Mr. Smythies' words might also have been written of any of the other tracts of *krukoh kampong* which I examined in various parts of the Baleh region. Moreover, judging from observations made at Rumah Nyala, regeneration subsequent to the *krukoh* stage is even more rapid than Mr. Smythies predicts. I was able, for example, to follow the recuperation of *kampong* land which had been cleared and farmed in 1949-50; by February, 1951, that part of the land not cultivated again in 1950, had reached the stage known as *dijap kampong*. This *dijap kampong* had become (about nine months after the harvest of 1950) a dense thicket of thriving plants, many of the young trees being eight feet and more in height (Plate 23). There can be no doubt that, if unmolested, this *dijap* would become healthy secondary jungle. The composition of such secondary jungle (*damun*) is, of course, very different from that of the original rain-forest. A study of the different types of plant association which result from Iban methods of *padi* cultivation would provide many fascinating problems for the plant ecologist. All that need concern us here however, is the important fact that secondary jungle which springs up after the taking of one crop from *kampong* land, is vigorous and healthy, containing very few noxious weeds.

Erosion

134 295. Although there is very little trustworthy evidence, such as does exist suggests that when only one crop is taken from virgin land, there is very little erosion. When virgin land is being farmed, the surface is only seriously exposed for one or two months after firing, and even during this period there is a protective layer of humus, ash, and partially burnt logs and boughs. As soon as the harvest is over a cover of young plants begins to establish itself. The only thorough study of erosion under conditions of shifting cultivation, of which I am aware, was that carried out by the Forestry Service of the Indies, at an experimental station

as follows: "Botanically very complex, comprising 2,000 or more species. Climbing palms (rattans) and numerous species of large vines (lianas) occur; bamboos scarce, though climbing bamboos occur here and there. Many tree species carry a large epiphytic flora on their trunks and branches, e.g. ferns, mosses, orchids. The forest floor, owing to rapid oxidation, does not carry a thick layer of leaves and humus."
(For this note I am indebted to B. E. Smythies, Esq.).

[1] B. E. Smythies, MSS., 30th August, 1949.

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near Tjiwidej, in West Java. Two adjacent parcels of forest land, lying on rather steep slopes, at an altitude of 1,800 metres, were selected for study. Each was drained separately, and at the foot of each slope, elaborate catch-basins were constructed, so that the run-off of water could be measured and the amount of sediment weighed. One piece of land was terraced, and the other left in its natural state. Pelzer reports: "During the first year both parcels lost very little soil because the humus layer protected it; but in the second year the unterraced parcel lost 5·065 kg. of silt per square metre, whereas the terraced parcel lost only one-half as much, or 2·524 kg."[1]

296. At Rumah Nyala I did not have the facilities to make a controlled study of erosion, but my impression was that when virgin jungle is cultivated *for one season only*, erosion is very slight indeed. Erosion, I would suggest, only becomes serious when land is farmed for two or more years in succession, or when the cycle of cultivation becomes too short.

The Effects of Shifting Cultivation on Soil Composition and Structure

297. A valuable study of the effects of shifting cultivation on soil composition and structure has been made in Ceylon by Dr. A. W. R. Joachim and S. Kandiah.[2] (In Ceylon, shifting cultivation is known as the *chena* system). The conclusion reached after most detailed investigation is that there are "no adverse effects on soil structure expressed as percentages of total crumbs or true crumbs, as a result of chena-ing forest land . . . . Thus chena land on abandonment is both from the fertility and structural points of view in much the same condition as any other land that is utilized for rotation cultivation".[3]

The Factor of Weed Growth

298. Joachim and Kandiah go on to ask why it is that the native farmer adopts the system of shifting cultivation. "The answer", they write, "is weed growth, which is beyond the capacity of the chena cultivator to tackle by hand and to control, while, implements, were he able to obtain them, cannot be used owing to the presence of stumps on the land".[4] These conclusions are for Ceylon, and it does not follow that they are valid for shifting cultivation as practised in Sarawak, comparable though it be to the chena system. This question can only be settled

[1]Karl J. Pelzer, "Pioneer Settlement in the Asiatic Tropics: Studies in Land Utilization and Agricultural Colonization in Southeastern Asia," New York, 1945, p. 32. For a detailed report of the erosion experiment at Tjiwidej, see: L. Gonggrijp, "Het erosie-onderzoek," Tectona, Buitenzorg, Vol. 34, 1941, pp. 200-220.

[2]Dr. A. W. R. Joachim and S. Kandiah, "The Effects of Shifting (Chena) Cultivation and Subsequent Regeneration of Vegetation on Soil Composition and Structure," Tropical Agriculturist, Vol. 104, 1948, pp. 3-11.

[3]One significant aspect of shifting cultivation is the effect of heating on soil fertility, "not only is the productivity of the soil increased by partial sterilization, but there is also an increase in the rate of growth of plants grown in such soils."

Dr. H. W. Jack (writing in 1923) comments: "These phenomena have only been discovered in the last decade and yet the hill *padi* planter has taken advantage of them, probably for hundreds of years, in the practice of burning the scrub and timber on his clearings and thus unconsciously increasing the productivity of his land by the partial sterilization which such heating of the soil affords." (Ref.: H. W. Jack, "Rice in Malaya," Malayan Agricultural Journal, Vol. 11, 1923, p. 126.)

[4]Joachim and Kandiah (1948) *op. cit.*

Cf. Allsop, F., "Shifting Cultivation in Burma," Proceedings of the Seventh Pacific Science Congress, vol. VI, 1953, p. 278: "Local conditions determine whether or not a clearing is cultivated for one season or more. The vigour of the weed growth, particularly in the warmer lands, sometimes makes it impossible to obtain a crop after the first season, except by expenditure of more energy than the cultivator is prepared to exert."

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by further research by botanists and soil scientists; but meanwhile, the conclusions of Joachim and Kandiah deserve our closest attention. In my own opinion their analysis is directly applicable to the conditions in Sarawak, for it is borne out by my own observations among the Iban.

299. As pointed out earlier in this report (Para. 118-124), weed control is one of the major difficulties with which Iban farmers have to cope. It is my impression that weed growth, more than any other single factor, is responsible for crop failures. As the Iban put it: "Amongst weeds *padi* will not grow" ("*Alam babas enggai padi idup*"). On a number of farms of Rumah Nyala, large areas became so rife with weeds that the *padi* was choked out of existence. One of the great advantages of farming virgin land is that weeds are few, and fairly easy to control. When *damun* is cultivated they are always worse, and if land is overworked, a stage is reached when weeds gain the upper hand and the land becomes derelict (*tanah kusi*, lit. used-up land). Under these conditions weed growth becomes so severe as to defy control.[1] This is graphically expressed in the Iban aphorism: "If *tanah kusi* (i.e. weed infested ground) is farmed, Pulang Gana—the god of fertility—himself, cannot grow *padi*" ("*Enti bumai di tanah kusi, Pulang Gana empu enda depat bulih padi*").

The Effects of Cultivating Krukoh Kampong

300. We have seen that after one crop of *padi* has been taken from virgin land, regeneration is rapid and very few noxious weeds become established. Let us now consider what happens when virgin land is cultivated for two years in succession (i.e. the *krukoh kampong* method of usage): "The stools sending up coppice shoots are either killed or greatly weakened; the tree seedlings are mostly killed, though a few may coppice; and the only fresh tree seed on the ground will be light wind-borne seed that may have blown in from seed-bearers near-by. Meanwhile the ferns and grasses which develop enormous quantities of very light spores and seeds that carry for miles on a zephyr, are enabled to gain a footing amongst the now weakened tree regeneration; and as they are fire resistant each successive burn helps the weeds at the expense of the trees and shrubs".[2] As this account indicates, regeneration after two successive burns (i.e. *krukoh kampong* usage) is of a markedly different type from that which follows a single crop taken from *kampong* land. Moreover, this difference persists and is reflected in the inferior quality of the *damun* which ultimately results. In other words, successive burnings inflict upon the land serious and permanent injury.

The Effects of Cultivating Dijap Kampong

301. Deleterious results also ensue when healthy, young vegetation (i.e. from *kampong* land) is slashed and burnt before proper regeneration (which would seem to require at least ten years) has taken place. This means that the *dijap kampong* method of land usage is also wholly to be condemned. An interesting illustration of the outcome of this kind of usage is contained in the report of an investigation carried out by the Forest Department in Malaya. In 1945, part of the Kanching Forest Reserve was felled, and the cultivation of hill rice took

[1] Cf.: "The Sea Dyaks (i.e. or Iban) themselves, however, do not suppose that the soil is in any way incapable of bearing further culture; but give always as a reason for deserting their farms, that the weeds and grass which immediately spring up after the *padi* has been gathered, are less easily eradicated, than ground occupied by old jungle is prepared." Ref.: Low, H., "Sarawak," 1848, p. 231.

[2] B. E. Smythies, MSS., 30th August, 1949.

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place. In 1947, the area was cleared a second time, and part of it fired; the vegetation was thus of the type known to the Iban as: *dijap kampong langgang se taun* (e.g. *K*1-3). *Padi* cultivation did not occur however for the offenders were prosecuted. Three sample plots were established to study "natural plant succession", on (*a*) the slashed and burnt area; (*b*) the slashed and unburnt area; and (*c*) the unslashed, secondary growth dating from the farming season of 1945-46. After a period of 18 months the following conclusions were drawn: "The vegetation differences between the burnt and unburnt area are most marked, the extra burn obviously having killed a large number of stumps that would have coppiced and roots that would have sent up sucker shoots, as well as killing the large quantities of dormant seed, which are always present in the top layers of the soil. The resulting delay in obtaining a vegetative cover, as well as the impoverishment of the soil, has permitted the appearance of wind-borne colonisers such as *Imperata arundinacea*, which, once present is difficult to eradicate, and in itself prevents or delays the invasion of woody species".[1]

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302. Evidence has now been adduced to show how injurious are the effects of cultivating either *krukoh kampong* (e.g. *K*1-2), or *dijap kampong* (*K*1-3, *K*1-4, etc.). More intensive cultivation, as—for example—of *pangkal kampong* (e.g. *K*1-2-3), or *dijap krukoh kampong* (e.g. *K*1-2-5, *K*1-2-6), produces even more detrimental results, for repeated burning only serves to accelerate the regression of the vegetation from the climax type of rain-forest to a post-climax savannah type of plant association.[1]

Excessive Usage of Secondary Jungle

303. So far we have been discussing the effects of bad usage in virgin territory. All that has been said applies with even greater force to the exploitation of mature secondary jungle, or *damun*. If well established *damun* (say, 15 years old), resulting from a single year's use of *kampong* land, is felled and farmed *once only*, adequate regeneration soon takes place. But if *damun* land be cultivated for two years in succession, the injurious results—already noted for this kind of usage in virgin territory—are very considerably magnified. The same applies to the farming of *dijap damun*; and if three successive burns occur (i.e. the cultivation of *pangkal damun*) the land is permanently degraded into *tanah kusi*, and becomes worthless.

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304. A striking example of what happens when *pangkal damun* is farmed was encountered at Rumah Pengulu Jenggut, in the lower Batang Baleh. In August 1949—together with Mr. B. E. Smythies—I examined a series of low spurs (e.g. about 200-300 feet, above the level of the Baleh) which had been farmed for three seasons in succession (i.e. the seasons of 1946-47, 1947-48 and 1948-49) by certain *bilek* families of Rumah Jenggut. In early 1946, the spurs had been covered with *damun*, and judging from adjacent sections, it had been average quality *damun* perhaps 12-15 years of age. (The *kampong* in this part of the Baleh —known to the Iban as Batu Bansu—was first felled in about 1906, but its subsequent usage is obscure). Pengulu Jenggut, and a number of other informants,

[1]Ref.: "The Malayan Forester," Vol. XII, No. 2, 1949, pp. 83-86.

[2]Cf.: Professor E. B. Copeland's comment on shifting cultivation in the Philippines, where it is known as the *caingin* system: ". . . . the first crop of the *caingin*, if the ceremonies are effective, is very heavy, the next not nearly so good, and a third may or may not be planted, but at best will be poor. In the absence of fire the land returns to brush and then to forest, unless cleared again before it reaches that stage. The Government's chief objection to the *caingin* practice is that, by accident or intent, fire after the clearing is abandoned very often turns the site to grass instead of forest." (E. B. Copeland, "Rice," 1924, p. 220).

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had not the slightest hesitation in relating that the land had been cultivated during three consecutive seasons, and it was clear that they regarded this as a perfectly ordinary sort of happening. Several of them did mention, however, that the harvest on the third time of farming was a very poor one, for the *padi* was overwhelmed with weeds and would not grow properly.[1] That this was the case there can be little doubt, for when Mr. Smythies and I inspected the land about four months after the third successive harvest, it had become derelict (*tanah kusi*); there was scarcely a tree or shrub to be seen other than the common weed *kemunting* (Melastroma), the rest of the vegetation being composed almost entirely of the grasses, ferns and herbs that constitute the *lalang* association.[2] There seemed no chance that this land could ever again become healthy *damun*; probably it will remain permanently in the grip of *lalang* and associated weeds, like so many of the hills bordering the course of the Rejang between Kanowit and the mouth of the Baleh. In three short seasons—and for very small return—Iban prodigality had reduced moderately productive land to a useless waste.

305. Also at Rumah Jenggut—in August, 1949—we inspected a tract of *krukoh damun* which had sprung up after the farming of about 10 year old *damun* during the *padi* season of 1948-49. This *krukoh damun*—then four to five months old—consisted of a thick undergrowth, interspersed with young trees up to about 6 feet in height.[3] It presented a most marked contrast to the neighbouring *tanah kusi* (described in Para. 304), which had been cultivated for three years in succession. There can be no doubt that this *krukoh damun*, if left untouched for ten or more years, would become healthy *damun* once again. But, alas, part of it had already been slashed for cultivation during the coming season (i.e. 1949-50).

Conclusion

306. This brings us to the heart of the matter. Under Sarawak conditions, if virgin rain-forest is felled, fired and farmed for *one season only*, and then allowed to recuperate, adequate regeneration takes place. Furthermore, if thereafter the resulting secondary jungle (*damun*) is brought into cultivation at sufficiently rare intervals (i.e. about every 12-15 years), and *never for more than one season*, the land may be utilized virtually indefinitely without serious degradation taking place. Should these conditions be observed, shifting cultivation is an economically justifiable form of land usage. However, as soon as the cycle becomes too short, and particularly when land is cultivated for two or more years in succession,

[1] Cf.: Mr. B. E. Smythies account: "... the farm behind Pengulu Jenggut's house started as *damun* in 1946 and the rapid deterioration resulting from cropping in successive years was graphically illustrated by the Pengulu himself—he described the *padi* as being about chest-high in 1947, waist-high in 1948, and knee-high in 1949. The ground is now *tanah kusi* ...." (Ref.: "Sarawak Gazette," 7th October, 1949, p. 252).

[2] It was freely admitted by the members of Rumah Jenggut that the land had become *tanah kusi*. Degraded land of this type is still rare in the Baleh, and it may be of interest therefore, to record the names of the various plants which have established themselves on the *tanah kusi* at Rumah Jenggut. Within a brief period 26 different species, nearly all of them noxious weeds, were collected; they fell into four main classes as follows:

Grasses: *lalang, rumput blanda, ruding mawang, brang emplisu, kajuru, nyabu, paka, tempara Apai Sali.*

Ferns: *deman, selap padi, kalindang, paku kras, paku unus, remai besai, remai mit.*

Herbs: *mambang, kaning mayau, kamiyong, rubai, manyam, mambang iko lachau, beruru, jelumpang.*

Shrubs: *entimau, bansu, kemunting.*

The following plants were identified in this *krukoh damun*:

empapa, empilap, gentu, purang, pempan, aras, manyam, tapang lalat, manding, sawe, serang, grating.

1: Freeman E-5 (1949-1951) 1955 OC6 Iban OC6

serious degradation occurs, and often ends in complete devastation. When this happens shifting cultivation can only be characterized as wasteful and dangerous. Of the fact that the methods employed by the Iban are prodigal of natural resources and frequently produce most deleterious results there can be no doubt. Particularly to be condemned is their custom of cultivating land for two, or three years in succession, or several times within a span of five or six years. If shifting cultivation in Iban pioneer areas is to be stabilized, it is of crucial importance that every attempt should be made to eradicate these prodigal methods. The problem of the stabilization of hill *padi* cultivation in Sarawak is discussed in the next and concluding part of this report.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

Part VI

THE PROBLEM OF SHIFTING CULTIVATION

Introduction

X 243 307. The primary object of this report has been to present a factual survey of Iban agriculture. Here—in truth—the essential task of the research worker ends . . But what of the serious problem to which the Iban system of shifting cultivation gives rise? What can be done to counteract the deleterious effects of Iban methods of land usage? This is a problem both complex and difficult, and it must be stressed from the outset that there are no easy or short term solutions; but the opinions of a social anthropologist may possibly be of some interest to those responsible for framing agricultural and native policies.

The Stabilization of Shifting Cultivation

308. As we have seen, the great bulk of the Iban population live by shifting cultivation, and it is also the method followed by most of the other indigenous peoples of Sarawak. It has been estimated, by the Sarawak Department of Agriculture, that 241,000 people—scattered throughout the five Divisions of Sarawak—derive their subsistence from hill/dry *padi* cultivation.[1] This figure indicates the scale of the problem with which we are faced. It has been suggested by some competent observers that the ultimate solution of Sarawak's agricultural difficulties lies in the development of the alluvial flats of the deltas and coastal regions. This may well be true, but any attempt to resettle the hill peoples on wet *padi* lands would be fraught with immense practical and political difficulties,[2] and it is obvious that it would have to be a very gradual process. This means that at least in the immediately foreseeable future, shifting cultivation will continue to be the method followed by the great majority of the hill peoples. This conclusion has also been reached by the Sarawak Department of Agriculture: "It is now accepted that it is inevitable that hill/dry *padi* cultivation will continue in some form or other for many years in Sarawak".[3] I propose, therefore, to accept this supposition, and to confine myself to a consideration of possible ways in which the stablization of shifting cultivation among the Iban can be achieved.

The Conditions under which Shifting Cultivation is Tolerable from an Agricultural Point of View

X 243 311 309. Let us begin by trying to define the conditions under which shifting cultivation may be said to be technically tolerable—from an agricultural point of view. From a silvicultural point of view, shifting cultivation may be said to be objectionable if it destroys timber that would otherwise be exploited by the

[1] Department of Agriculture, Sarawak, Annual Report for 1948, p. 52.

[2] Again, from the anthropological point of view, there are a number of strong objections to this proposal.

[3] Department of Agriculture, Sarawak, Annual Report for 1949, p. 19.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6.

Forestry Department, or by private concessionaries. This danger can best be met by the setting up of forest reserves). Pelzer, in summarizing the opinions of a number of different authorities, states that shifting cultivation is not objectionable "so long as vegetation and the fertility of the soil are restored by nature" [1] This, I submit, we may reasonably accept as our criterion. What then are the minimum conditions under which this goal of adequate natural restoration is likely to be attained? Here, obviously, we must be guided by the findings and opinions of agriculturists.

310. Accepting the criterion that "a soil must be rested for such a period that its intrinsic composition approaches that of the original jungle soil", Joachim and Kandiah have suggested that "generally speaking, from 8 to 10 years should be an adequate rest interval in most districts in Ceylon".[2] For Sarawak, however, with its poorer soils, even 10 years would seem to be too short an interval. Thus, in the Annual Report of the Sarawak Department of Agriculture for 1949, it is laid down that: "a reasonable bush fallow of say not less than 12 years"[3] should be preserved between successive crops. Both Mr. R. W. R. Miller (Director of Agriculture, Sarawak), and Lt.-Col. Robertson (formerly Director of Agriculture, Burma) have expressed the opinion that a cycle of 15 years' duration is *ideal*.[4] In the light of this evidence, we may accept for Sarawak:

(*a*) a 12-year bush fallow period as the minimum standard;
(*b*) a 15-year bush fallow period as an ideal to be sought after.

The Carrying Capacity of Land under the System of Shifting Cultivation

311. If these standards are accepted, it follows that for every tract of land there will be a fairly definite *carrying capacity*. I am using this term in the same sense as W. Allen, who defines it as the maximum number of people that a given land area will maintain in perpetuity under a given system of usage, without land degradation setting in. Further, if the total population of an area is equal to or less than the land capacity for the system of agriculture practised, then a *population-land balance* exists within that area.[5]

312. What then will be the 'land carrying capacity' for (*a*) the minimum standard of a 12-year cycle? and (*b*) the ideal standard of a 15-year cycle? In answering these questions we must bear in mind that among the Iban it is the *bilek* family that is the basic economic unit. But the *bilek* family, as we have seen, is a group which does not vary greatly in size. Thus, in the three long-houses selected for special study, about 75% of families fell within the range of from three to seven members; the general mean for over 60 different long-houses was 5·75 members per *bilek* family. Investigations at Rumah Nyala indicated that the average area felled per annum per head of population is about 0·8 of an acre. This gives us an average area felled per *bilek* family per annum of about 4·6 acres.[6]

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[1] Pelzer (1945), *op. cit.*, p. 24.
[2] Joachim and Kandiah (1948), *op. cit.*
[3] Department of Agriculture, Sarawak, Annual Report for 1949, p. 19.
[4] E. R. Leach, "Social Science Research in Sarawak," 1950, p. 89.
[5] W. Allan, "Studies in African Land Usage in Northern Rhodesia," Rhodes-Livingstone Papers. No. 15, Oxford, 1949, p. 74.
[6] It is important to note that in what follows we are assuming a subsistence economy in which all requirements in *padi* are met by shifting cultivation. The average of 0·8 of an acre per head per annum assumes a yield of about 14 bushels per acre if mere subsistence is to be provided, and a yield of about 17 bushels per acre if normal minimum requirements are to be attained.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

313. If this figure be accepted, it is then possible to calculate the number of *bilek* families per square mile which any given usage cycle can support. For example, if the ideal cycle of 15 years is followed, this would mean that each *bilek* family requires about 69 acres of land, and if *all the land* in a particular territory were cultivable, this would permit a carrying capacity of about 9 *bilek* families per square mile. For the Iban however, we would never be justified in assuming that all of a long-house territory is available for *padi* cultivation. In many places in almost any territory, there are rocky outcrops or excessively steep slopes; again, land has to be set aside for burial grounds, habitations, vegetable gardens and fruit orchards; religious beliefs often interdict the felling of certain tracts of jungle; finally, most long-house territories now contain rubber plantations covering many acres of land. At a rough estimate, I would say that one is not justified in assuming that more than about 70%—80% of a long-house territory is available for the growing of *padi*. Clearly there will be a good deal of variation from community to community.

314. In Table 32, the carrying capacity of land for a series of different circumstances has been summarized. (The general assumption is made that *the average bilek family* requires 4·6 acres of land per annum). Five different fallow periods (15 years, 12 years, 10 years, 8 years and 6 years), all of which have a bearing on our present enquiry, have been selected; and the carrying capacity of the land—in terms of the number of *bilek* families per square mile, has been calculated for each cycle. Furthermore, the variation which occurs when only part of the land is cultivated is shown; four different proportions (90%, 80%, 70%, and 60%) have been selected. In each instance an approximate figure is given (i.e. the next lowest whole number).

Table 32: The Carrying Capacity of Land under the System of Shifting Cultivation

Duration of bush fallow period	*Carrying capacity of land in bilek families per square mile*			
	If 90% of land is cultivated	*If 80% of land is cultivated*	*If 70% of land is cultivated*	*If 60% of land is cultivated*
15-year cycle	8	7	6	5
12-year cycle	10	9	8	6
10-year cycle	12	11	9	8
8-year cycle	15	13	12	10
6-year cycle	20	18	16	13

Population-Land Balance under the System of Shifting Cultivation

315. The conclusions recorded in Table 32, permit us to form a general estimate of the population-land ratio which must be maintained if shifting cultivation is to remain a technically tolerable system. Let us begin by accepting the ideal cycle of 15 years' duration, and supposing that only 70% of the land is used for *padi* cultivation. If this standard is to be safely maintained, it means that the population-land ratio must not be allowed to rise above the rate of 6 *bilek* families per square mile. This would represent a population density of about 34 persons per square mile. On the other hand, if the minimum safe standard of a 12-year bush fallow period is accepted, and we suppose that only 70% of the land is cultivated, this means that a population-land ratio of about 8 *bilek* families per square mile must be observed. This represents a population density of about 46 persons per square mile.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

316. We may say then that if shifting cultivation is to be stabilized, Government policy should be directed towards achieving, as far as possible, the ideal population-land ratio of about 6 *bilek* families per square mile.[1] As a preliminary step, however, the somewhat higher 'standard' ratio of 8 *bilek* families per square mile might well be accepted.[2]

317. Further, we can say that as soon as the population-land ratio rises above the level of 9 *bilek* families per square mile (representing a population density of about 51 persons per square mile), the danger of land degradation[3] is imminent; and that when the ratio of 12 *bilek* families per square mile (representing a population density of about 69 per square mile) is exceeded, land degradation is certainly occurring.

The Achieving of a Population-Land Balance

318. This leads us to a further problem. Supposing the 'standard' population-land ratio of 8 *bilek* families per square mile, be accepted as a desirable preliminary level at which to attempt to stabilize shifting cultivation, how is this goal to be achieved? Clearly, it would first be necessary to carry out a survey of all areas in which shifting cultivation is practised, and to determine the existing population-land ratio for each long-house community. This is a tremendous task, but it would seem essential if shifting cultivation is effectively to be controlled. Such a survey would obviously have to be carried out in stages over a considerable number of years. First, a general appraisal for the whole Colony should be undertaken, and on this basis, a plan drawn up in which the worst districts were dealt with first. District surveys could then be undertaken with the aid of aerial photography.

319. In many pioneer areas like the Baleh, the population density is still well below the danger level, and the problem posed by these regions we shall examine presently. In other Iban districts however, and particularly in parts of the Second Division, the population-land ratio has probably exceeded the danger level of about 9 *bilek* families per square mile. (Furthermore, in many instances long-house territories will contain a proportion of derelict land, and due allowance would have to be made for this fact in reckoning population-land ratios). What then is to be done in cases where the population-land ratio has already exceeded the danger level? In certain parts of the Second Division (particularly in the Saribas District), some Dayak families are trying to solve the problem of land shortage and poor crops by abandoning their traditional subsistence economy, and turning for their livelihood to the cultivation of rubber as a cash crop. This tendency undoubtedly lessens the bad effects of shifting cultivation, but the extent to which cash crops offer a feasible solution depends on general economic factors, which lie beyond the scope of our present enquiry. In view of the world

[1]It should be noted that all of these population-land ratios are based on the assumption that land is never cultivated for two or more seasons in succession. When land is cultivated in this way, serious land degradation occurs at much lower densities.

[2]Very obviously in any long-term planning due allowance would have to be made for possible increases in population. (The 1947 Population Census showed a total population of Iban—for Sarawak—of 190, 326; and this represented an increase of 22, 626 over the enumeration of 1939).

[3]W. Allan has described land degradation (i.e. for Northern Rhodesia) as "a process which results in radical changes in the whole character of the land; loss of mineral foods, oxidation and disappearance of organic matter, breakdown of soil structure, degeneration of vegetation; and the setting up of a new train of land and water relationships." (W. Allan, 1949, *op. cit.*, p. 1).

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X 243 311 shortage of rice, which shows small sign of abating, it would seem essential that Sarawak should strive as far as possible to meet her own requirements, and this situation greatly complicates the task of dealing with shifting cultivation. In areas like the Saribas District, there appears to be no alternative but large scale development of wet *padi* cultivation and extensive re-settlement of the local Dayak population.

The Problem of Shifting Cultivation in Pioneer Areas

X 243 311 161 320. Let us now return to the problem of shifting cultivation in the pioneer areas—such as the Baleh—which are the primary concern of this report. Here we are faced with a very different situation. In none of these areas (as far as I have been able to determine) has the density of population reached a dangerous level. Because of the lack of detailed, small-scale maps, the reckoning of population densities for many of the interior districts of Sarawak is a difficult task, and often only very approximate estimates are possible. However, as an example of conditions in the Baleh region let us take the Sungai Sut. In 1948 (according to official records kept at Fort Sylvia, Kapit), the Sut valley contained 21 long-houses with a total population of 1,570 persons. If we include all the land within about two miles of the rivers' courses to which settlement is confined, these 1,570 people occupied an area of somewhere about 100 square miles. Thus, if we assume that only 70% of this area is used for *padi* cultivation, the population-land ratio was not more than about 4 *bilek* families per square mile. For the Baleh region as a whole (i.e. the region contained within the fartherest points of Iban occupation), the population-land ratio is even lower, and probably lies somewhere between 2 and 3 *bilek* families per square mile.

X 243 311 321. As these figures indicate, the population density in the Baleh region is well below the critical level of about 9 *bilek* families per square mile. This does not mean however that serious land degradation has not been caused by the Baleh Iban. Iban methods of land usage, as we have seen, produce most deleterious results even in areas where there are adequate reserves of virgin jungle. Indeed, their whole system of land usage is a response to circumstances in which reserves of virgin jungle have been virtually limitless. When they occupied the Rejang basin, the Iban were invading the territories of alien tribes, and their understandable impulse was to exploit their gains to the full. There can be no doubt that in the past, the Iban viewed the forests that surrounded them as an expendable resource. Their method has been to extract all the wealth they could from the *kampong* nearest at hand, and then move on to fresh jungle. As already remarked, they have been less shifting cultivators than '*mangeurs de bois*'.

322. These methods—let me reiterate—have been brought about not by any scarcity of forest land, but by conditions of super-abundance. Furthermore, it is important to recognize, that from the point of view of individual *bilek* families the system of intensive usage had many marked advantages. Hundreds of families in the Baleh and similar areas, have accumulated considerable wealth (in terms of Iban values) from farming virgin jungle. Again, during the course of their advance in the Third Division, the Iban were very largely a power unto themselves. When it suited them they gave recognition to the White Rajah, but again and again, from the First Katibas Expedition in 1869 to the Second Gat Expedition of 1919, various groups resorted to open rebellion, and repeatedly defied attempts to restrain their movements. They still remain a power to be respected. It is extremely important, I would suggest, that all of these background factors

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should be taken into consideration, if the problem of Iban shifting cultivation is to be properly understood.

The Stabilization of Shifting Cultivation in Pioneer Areas: the Need to Change the Entire Basis of Iban Land Usage

323. How then is the stabilization of shifting cultivation to be achieved in pioneer areas like the Baleh? So far the only positive step to have been taken has been the establishment by Government of forest reserves, and the setting up of fixed points (*paks*) beyond which shifting cultivation is not permitted. This delimitation of the areas available to Iban cultivators is a very necessary initial step, but it is essential to realize that it is in no sense a solution of the problem. Indeed, if other remedial measures are not taken, the action of confining the Iban will—in due course—only aggravate the spoilation it is designed to curtail. As we have seen, Iban methods of land usage are adapted to a system of constant expansion. When the possibility of further expansion is ruled out, the deleterious effects of Iban prodigality become an even greater threat. Therefore, if the policy of containment is to succeed, it is imperative that most strenuous efforts should be made to alter the entire basis of Iban land usage.

324. Very obviously, the most important task of all is the abolition of the Iban practice of cultivating land for two or more seasons in succession, or several times within a brief span of years. Here we are concerned with three main types of usage:

(*a*) *the pangkal usage:* in which land is cleared, fired and cultivated [redacted]ng three successive seasons (e.g. K1-2-3 or D1-2-3);

(*b*) *the krukoh usage:* in which land is cleared, fired and cultivated for two seasons in succession (e.g. K1-2 or D1-2);

(*c*) *the dijap usage:* in which land is cleared, fired and cultivated, twice within a period of from three to five years (e.g. K1-3, K1-4, K1-5, or D1-3, D1-4, D1-5).

N.B. There is also the special kind of *dijap* usage known as *dijap krukoh kampong* (e.g. K1-2-4, K1-2-5, or K1-2-6).

325. All of these methods are undoubtedly detrimental, and their eradication is clearly an essential first stage in any plan for the stabilization of shifting cultivation. If the *pangkal*, *krukoh* and *dijap* methods of land usage could be eradicated much would have been done to ameliorate the whole situation, and a major advance would have been achieved. I would recommend therefore, that the Government of Sarawak should launch a campaign against these wasteful practices. It must not be thought that success will be easily achieved. The types of usage we are discussing are now deeply rooted in Iban custom, and it is certain that any plan to forbid them will meet with strong resistence. But if the situation is to be brought under control, this resistence must be faced and overcome. How is this to be done?

A Propaganda Campaign against Wasteful Methods of Land Usage

326. As a first step, I would suggest, an intensive propaganda campaign should be instituted. It must be brought home to the Iban that fresh tracts of virgin jungle are *no longer available*,[1] and that they must resign themselves to permanent

[1]*This is a crucially important point.* For more than seventy years, the Iban have had experience of Government measures designed to prevent them from occupying fresh areas of virgin jungle, and so far they have always succeeded in breaking through to get their own way. Most of the Baleh Iban are still working on the supposition that there are still adequate

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

occupation of their present territories; and this being so, it is in their own interests that they should conserve their own lands. The evil effects of *pangkal*, *krukoh* and *dijap* usage must be explained as graphically as possible, and great emphasis placed on the calamities which will overtake a community should their lands—*the only lands available to them*—become *tanah kusi*. Stress should also be laid on the fact that supplies of rice from the outside world cannot be relied upon. It must be driven home that if future generations of Iban are not to starve (i.e. the children and grandchildren of those now farming), it is imperative that the custom of cultivating *pangkal*, *krukoh* and *dijap* should be made taboo (*mali*).

327. If such propaganda is to be successful, it is of the utmost importance that it should be couched in terms which the Iban can readily understand and appreciate; and not, for instance, in the language of the scientist or agriculturist. Iban agricultural methods, it must be constantly remembered, are still predominantly based on fervently held magico-religious beliefs; and it devolves upon Government to present its plans in a way that will carry conviction to Iban minds. This need be no disadvantage, for with forethought, telling use could be made of many of the ritual concepts which the Iban employ in thinking of their land and the cultivation of their precious *padi*.

328. It is also vital that most of this propaganda should take effect at the level of the *bilek* family—and not be directed merely at *pengulu* and *tuai rumah*. As we have seen the *bilek* family is the basic economic unit of Iban society, and cultivates its own land as an independent unit. *It is with individual bilek families, therefore, that changes in land usage must take place.* Moreover, it is important to realize that the *pengulu* or *tuai rumah* has no real authority in the internal management of any *bilek* family other than his own. The only sound method will be for Government officers to visit Iban long-houses and deal directly with the senior members of *bilek* families.

329. This propaganda campaign could be largely organized through the existing administrative system, but if the Government of Sarawak is persuaded that the problem is a sufficiently serious one (and I am convinced that it is), the whole campaign should be put in the hands of specially appointed officers. What is really needed is something of a crusade, organized by people who have the welfare of Sarawak and its native inhabitants at heart, and who are fully aware of the harm that will result if land degradation is allowed to go on unchecked.

The Possibility of Legal Control

330. A propaganda campaign of the kind I have sketched is, I submit, an essential first stage. After Government has succeeded in making known to the Iban the reasons for its opposition to wasteful methods of land usage, the question might then be considered of declaring the worst practices illegal. Obviously, however, this step would have to be made with great circumspection. A major difficulty if, say *krukoh* farming, were made illegal, would be the enforcement of the law. Iban farms are scattered over a vast area, and as many of them are extremely inaccessible, any system of inspection would be complicated and costly. Moreover, it would be most inexpedient to embark on such an undertaking in the face of strong Iban antagonism. To the anthropologist, it would

reserves of untouched jungle so that if their present territories do become exhausted it will always be possible to migrate to new areas. It is of the greatest consequence therefore, that Government should make widely known the various forest reserves which have been established, and announce its determination to protect them with the utmost vigilance. *Until the Iban are convinced of this, they will see little reason for altering their methods of land usage.*

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seem of over-ruling importance that every attempt should first be made to enlist native support by exhortation and persuasion. If this is skilfully enough done, it should be possible to induce a large number of Iban to change their ways; then—in due course—the ban on the cultivation of *pangkal*, *krukoh*, and *dijap* could be given a legal sanction.[1]

Complementary Long-Term Measures

331. I have singled out the eradication of the *pangkal*, *krukoh* and *dijap* methods of land usage, as an imperative first stage in the stabilization of shifting cultivation among the Iban. It should be accompanied, however, by a number of complementary long-term measures, all aimed at achieving a proper population-land balance. It is important, for example, that surveys should be begun as soon as possible, and detailed maps prepared showing the existing population-land ratios in the long-house territories of all districts. Only on this basis will it be possible to exercise full control. Full cognizance must also be taken of the effects of population increases.

The Size of the Long-house Community as a Factor in the Stabilization of Shifting Cultivation

332. This leads us to an immediate and practical issue: the size of the long-house community. The limited aim which we have set before us is the stabilization of shifting cultivation by the observance of rational methods of land usage. From what has been said of Iban methods of land tenure, it has been seen that each *bilek* family possesses a series of different holdings scattered over the entire territory of the long-house to which it belongs. Further, because of the difficulties inherent in hill *padi* farming it is essential that a *bilek* family should live as near as possible to the land it is cultivating. It is this situation which gives rise to the *dampa* system of satellite houses. Now, although living near to his farm enables an Iban to care for his *padi* much more efficiently than would otherwise be the case, the *dampa* system has the disadvantage that it encourages, and goes hand in hand with bad methods of land usage. As we have described, the building of a *dampa* is a considerable undertaking, and it involves a great deal of work on the part of all the *bilek* families concerned. Once a *dampa* group has settled down in a particular area there is a marked tendency for them to farm there for as long as possible, before tackling the formidable task of shifting all their belongings to another part of the long-house territory. There is, for example, a strong temptation for a family to follow the *krukoh* or *dijap* methods of usage, and so put off the unwelcome day when a move has to be made. This applies particularly to families with not quite sufficient land in the immediate area.

333. Now as soon as the land to be farmed is more than about one mile away from the main long-house, the *dampa* system springs up as a matter of course. If a rational cycle is to be followed it is important, therefore, that the long-house community should be restricted in size. What is really required is a community sufficiently small that a rational cycle, of say 15 years' duration, can be followed, and yet all *bilek* families operate from the main long-house. What size of community does this requirement presuppose? If we accept that the average *bilek* family requires about 4·6 acres per annum, about 69 acres would be required for

[1]If new areas of virgin jungle—say in the Baleh headwaters—are opened to Iban settlement, Government should grasp the opportunity of ruling that the *pangkal*, *krukoh* and *dijap* methods must not on any account be practiced, and of stipulating that occupation is conditional on the observance of a rational cycle of shifting cultivation, of say 12 or 15 years' duration.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

243 621 the adoption of a 15-year cycle; when allowances are made for uncultivable land, orchards, rubber plantations, burial ground, etc. it is probable that each *bilek* family would require about 100 acres. On this basis, one square mile of territory would be ample for a community of six *bilek* families, and under these conditions, all families could continue to reside in a centrally situated long-house, and work their farms from individual farm huts (*langkau umai*). As long as a community does not contain more than about 9-10 *bilek* families, this same system could be followed in normal circumstances.[1] However, as soon as long-houses increase in size beyond about 10 *bilek* families, the *dampa* system cannot be avoided, and the difficulties of following a standard cycle are immediately augmented.

243 621 656 334. We may say then, that if the serious effects of shifting cultivation are to be brought under control, every attempt should be made to prevent Iban communities from becoming too large. The goal to be sought after is a series of small communities (i.e. containing not more than about 10 *bilek* families), scattered at regular intervals throughout an entire district. This, however, runs counter to what, in the past, has been Government policy. Government regulations for the Iban of the Third Division, state that: "The person who erects the first post of a new house of less than 10 doors without special permission shall be fined $25, all to Government, and the house shall be dismantled by the builders".[2] Further, it is noted that: "No house of less than 10 doors shall be permitted except with the written authority of the District Officer for some good and sufficient reason".[3] In the "Sarawak Gazette", many cases are recorded of this policy being put into effect. For example, in the Third Division News, for October, 1937, it is mentioned that: "The tendency of the Oya Dayaks to leave their long-houses and split up into permanent *dampa* is again in evidence. They have been warned that the customary fine of half a pikul per door will in future be enforced in such cases".[3]

335. This policy undoubtedly had its origin in administrative convenience. For many years the custom of head-hunting was one of the principal problems with which the Brooke regime had to cope, and the Iban were always main offenders. After having attacked a neighbouring tribe, the Ibans responsible always did their utmost to elude arrest, and on a number of occasions rebel communities openly defied the Rajah's authority. In an attempt to control these unruly elements, Government insisted that no community should contain fewer than ten *bilek* families, for by this means it was possible to keep reasonable track of Iban movements, and it greatly facilitated the task of carrying out regular tours of inspection. Thus, in January, 1929—for example—the Acting District Officer, Kapit, reported that, with the exception of three communities, all the Iban of the Mujong River had been settled in long-houses of "10 doors or more, accessible for Government to visit".[4] This policy has largely prevailed. In 1948, the districts of Pengulu Jenggut and Pengulu Grinang contained a total of 61 communities; of these 76% were long-houses containing 10 or more *bilek* families, and 18 long-houses (or about 29% of the total) contained 17 or more *bilek* families.

[1] Conditions would vary considerably from community to community, and in some instances local topography would favour the setting up of the *dampa* system even in the case of small long-houses. But we are here concerned in trying to arrive at general norms.

[2] "Sea Dayak (Iban) Fines, Third Division," 1940, Part V, Section 10 f.

[3] "Sarawak Gazette," 1937, p. 256.

[4] "Sarawak Gazette," 1927, p. 124.

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336. Large communities then, make for administrative convenience. But inevitably, as we have seen, they also give rise to the *dampa* system, and tend to promote wasteful methods of land usage. Here, clearly, a choice must be made. In view of the serious threat of land degradation in Iban areas, I would recommend that the old policy of encouraging large settlements be abandoned, and that instead, small communities, better able to follow a rational cycle of cultivation, should be fostered. To-day, head-hunting is no longer a problem, and with the introduction of out-board engines communication has ceased to be the slow and laborious business it once was. Under these circumstances, 'administrative convenience' is a small advantage to put against 'the stabilization of shifting cultivation.' What I would suggest, as a preliminary step, is the removal of the ban on long-houses of under ten doors. This will at least make the way clear for the development of smaller communities better to adopt a rational system of land usage. In many cases, the setting up of smaller communities will be made difficult by the land tenure situation, but it should be Government policy to facilitate the process as much as possible. Again, it should also be Government policy to prevent long-house communities from becoming too large. As already remarked, there is a general drift of population from down-river to up-river areas; this should be controlled, and every attempt made to keep new communities small in size, and each in a carefully demarcated territory in which there is a proper population-land balance.

337. There are many ancillary aspects of the problem of shifting cultivation which have not been discussed in this report: topics such as the reclamation of degraded lands by the planting of fast-growing tree species,[1] the possibilities of terraced cultivation, the development of animal husbandry and mixed farming, and so on. This is not because these aspects of the problem are thought to be unimportant, but rather because they involve technical matters which lie beyond the competence of an anthropologist, and are best left to the attention of agricultural and forestry experts in Sarawak.

Conclusion

338. Shifting cultivation is probably the most difficult and complex problem facing the Government of Sarawak to-day. It is also a most urgent problem. In the Annual Report of the Sarawak Department of Agriculture for 1948, it was pointed out that: "The urgency of the situation cannot be over-emphasized". With this opinion, the anthropologist—and anyone else acquainted with the facts—must concur. It is hoped that this report has at least contributed a body of facts that will lead to greater understanding of hill *padi* cultivation among the Iban, and that suggestions have been made that will help towards the general stabilization of shifting cultivation in pioneer areas. Particular notice has been given to the wasteful systems of land usage to which the Iban have become addicted; and the *pangkal*, *krukoh* and *dijap* methods of usage have been singled out for special condemnation. Above all else it is imperative that most strenuous attempts should be made to eradicate these prodigal practices. If this report does no more than focus attention on these deleterious methods of land usage—and so instigate a crusade against them—it will have served a useful purpose.

[1]Cf. Allsop, F., "Shifting Cultivation in Burma: Its Practice, Effects, and Control, and Its Use to Make Forrest Plantations," Proceedings of the Seventh Pacific Science Congress of the Pacific Science Association, Vol. VI, 1953, pp. 277-285.

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GLOSSARY

104 adat ... ... mores, customary law
asi ... ... cooked rice
antu ... ... a spirit or supernatural being
baum ... ... a formal meeting (i.e. to hear a dispute or discuss some project)
bedara ... ... a ritual offering to the gods
bedurok ... to participate in a system of labour exchange
bejalai ... ... to go on a distant journey (with the intention of acquiring material profit and social prestige)
benih ... ... the seed of rice, or any other plant
bilek ... ... the living room of a family's long-house apartment
bliong ... ... a hafted adze
brau ... ... hulled rice
burong ... ... a bird; any omen bird or animal
dampa ... ... a subsidiary long-house occupied by families engaged in the cultivation of *padi*
damun ... ... mature secondary growth (i.e. from five to twenty years in age)
dijap ... ... young secondary growth (i.e. resulting from fallow periods of from one to four years)
duku ... ... a long-bladed jungle knife
gawai ... ... a ritual or religious festival
gantang ... a gallon; the unit in which *padi* is commonly measured
kamarau ... a prolonged dry period
kampong ... virgin jungle
kayu burong ... an omen stick
keban ... ... a sowing basket
krukoh ... ... secondary growth of three to four months in age
lalang ... ... Imperata sp., a noxious weed of *padi* lands
langkau ... a farm hut or watch-house
lanji ... ... a large cylindrical basket in which *padi* is carried
nanga ... ... the mouth of a stream or river
padi ... ... the rice plant; the grain of the rice plant
padi pun ... sacred rice
manggol ... a complex series of rites inaugurating a new *padi* farm
pemali ... ... a ritual prohibition or taboo
pengaroh ... a magical charm
pengerang ... mature secondary growth (i.e. twenty years of age and over
pengulu ... a district chief (i.e. Government appointed)
pindah ... ... to settle in a new area
piring ... ... a ritual offering which normally contains: rice (in various forms), eggs, salt, tobacco, betel chewing ingredients and *nuak*
ruai ... ... the roofed gallery of a long-house
sadau ... ... the garret or loft of a long-house apartment
sampi ... ... a prayer or ritual incantation
sangking ... sacred rice of secondary importance

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sintong	...	a reaping basket
sungai	...	a stream or river
tajau	...	a large pottery jar, usually of Chinese manufacture
tampas	...	a subsidiary farm
tanah kusi	...	derelict land, infested with Imperata and other noxious weeds
tangga	...	the entry ladder to a long-house, consisting usually of a notched log of hardwood
tanju	...	the open verandah of a long-house
tawak	...	a bronze gong
tebang	...	to fell a tree; the main stage in the clearing of a farm
tebas	...	to slash undergrowth; the preliminary stage in the clearing of a farm
tuai burong	...	the augur who takes auguries on behalf of the long-house community
tuai rumah	...	the long-house headman
tuak	...	rice beer
umai	..	a *padi* farm

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NOTES ON PHOTOGRAPHIC PLATES

243 342 *Frontispiece.* A view of the *padi* farm of the *bilek* family of Kubu, Rumah Nyala, Sungai Sut, in 1950. This farm was one of a series that extended along the crest of a 800ft.—900ft. ridge overlooking the headwaters of the Sungai Nyunggau and the main valley of the Baleh river. (See Sketch Maps 1 and 3). Cleared from virgin jungle in 1949, the land is being cultivated for the second year in succession. In the foreground, young *padi* and cassava plants are springing up. Beyond the farm hut (on the open platform of which are Kubu's wife and grandson), Kubu's farm extends towards that of his neighbour, Kamba (the augur of Rumah Nyala), whose farm hut can also be discerned. Virgin jungle (*kampong*) is still standing on the spur in the right background, while to the left are slopes thickly covered with young secondary growth (*dijap kampong*). Photograph taken on 23rd December, 1950, by Mr. B. E. Smythies.

243 313 137 1. Iban farm clearings in Sungai Saban, Ulu Sut, Kapit District, Third Division, Sarawak. Photograph taken on 3rd September, 1949, just before the firing of the farms. In the background is Mt. Goram (3,073 ft.).

243 137 2. A farm clearing (*umai*) in virgin jungle (*kampong*) in the Upper Batang Baleh, Kapit District. Photograph taken on 27th February, 1949, when the farm was covered with a heavy crop of *padi*. In the lower right hand corner is part of the roof of the farm house (*dampa*) from which the land was worked. Note tree stumps with buttress roots.

342 252 3. Dampa Adin, one of the subsidiary farm houses of Rumah Nyala, Sungai Sut, Kapit District. On 20th February, 1951, when this photograph was taken Dampa Adin housed 12 *bilek* families. The woman on the open platform (*tanju*) is tending *padi* that is being sunned prior to pounding.

4. The pattern of Iban agriculture: from the long-house in the valley the surrounding hills have been brought into cultivation. (For this photograph taken in Sungai Bangkit, Kapit District, I am indebted to Mr. B. E. Smythies).

243 245 5. An Iban farm (*umai*) in Sungai Tiau, Ulu Mujong, Kapit District. Photograph taken on 8th December, 1949, when the land was covered with young *padi*. To the left is a grove of sago palms, grown as a scarcity crop. In the valley, a watch-house (*langkau umai*) is in course of construction.

342 137 6. Dampa Along, one the subsidiary farm houses of Rumah Nyala, Sungai Sut, Kapit District. This *dampa*, occupied by three *bilek* families, was still in course of construction when this photograph was taken on 24th September, 1949, and only the central family had finished building the open platform (*tanju*) of its apartment. The felled secondary jungle (*damun*) shown in the background had been fired two days previously, but the burn was a very poor one.

313 7. Felling in virgin jungle (*kampong*). The axe-man is standing on a scaffolding (*tundan*) which lifts him above the buttress roots of the tree. Photograph taken on 1st August, 1949; Sungai Sut, Kapit District.

8. After the felling: secondary jungle (*damun*) drying in the sun. Photograph taken on 28th July, 1949, Sungai Sut, Kapit District.

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9. After the firing of the farms: the burn has been a bad one and to clear the land for sowing the farmer is gathering scattered branches and making bonfires of them. This operation is called *ngebak*. Photograph taken on 3rd October, 1949; Sungai Sut, Kapit District. 312

10. Dibbling taking place. The man is wearing a loin-cloth (*sirat*), the traditional garment of Iban males. Photograph taken on 15th October, 1949; Sungai Sut, Kapit District. 243X 291

11. An Iban woman sowing *padi*. The burn has been an exceedingly poor one, but the farmers have no recourse but to sow their *padi* amid the fallen timber that still covers the land. The woman is wearing a sun-hat (*tangga*). Photograph taken on 3rd September, 1949; Sungai Saban, Ulu Sut, Kapit District.

12. A young Iban girl amid ripening *padi*; on another part of the farm reaping is already in progress. The stumps are those of virgin jungle (*kampong*), and beyond lie the hills of the Mujong. Photograph taken on 21st February, 1951; Sungai Sut, Kapit District. 243X

13. A young man setting a spear-trap (*peti*) at the edge of his farm to protect it from wild pigs. He is wearing a hand-woven jacket (*kelambi*). Photograph taken on 4th March, 1950; Sungai Sut, Kapit District. 224 291

14. A watch-house (*langkau umai*); with walls and roofing of bark, it is strategically placed in the centre of the farm. In the foreground young *padi* is springing up. Against the front wall of the hut a tying-frame (used in *ikat* weaving) is leaning. Photograph taken on 21st February, 1951; Sungai Sut, Kapit District. 343 285

15. An Iban woman guarding her farm. The *padi* in the background—the second successive crop from virgin jungle—has already been reaped. Photograph taken on 20th February, 1951; Sungai Sut, Kapit District. 243X

16. Reaping in progress: the woman is gathering the panicles one by one and placing them in the reaping-basket (*sintong*) which is fastened about her waist. (The *padi* shown here is that of a test plot which gave a yield equivalent to 42·8 bushels per acre). Photograph taken on 24th April, 1950; Sungai Sut, Kapit District.

17. After reaping the *padi* is packed in large carrying baskets (*lanji*) and transported back to the *dampa* or long-house to be threshed. Photograph taken on 22nd April, 1950; Sungai Sut, Kapit District. 482 415

18. Winnowing taking place on the open platform (*tanju*) of a farm house (*dampa*). One woman pours the threshed grain from a basket (*baka*) while the other fans with a winnowing tray (*chapan*). Photograph taken on 12th April, 1950; Sungai Sut, Kapit District. 243X 415

19. A woman planting *sengkenyang*—magical plants which are believed to watch over and minister to the needs of the growing *padi*. They are planted close to the sacred rice (*padi pun*) in the centre of the farm. Photograph taken on 15th October, 1949; Sungai Sut, Kapit District. 243X

20. An old man and his daughter making an offering to the *padi* spirits (*antu padi*) during a *nganjong ka penyadai* ritual. This important ritual inaugurates the harvest. The offering (*piring*) can be seen resting on the ground between the two officiants. Photograph taken on 7th March, 1950; Sungai Sut, Kapit District. 782

21. In the reaping basket (*sintong*) which this young man is carrying is the seed (*benih*) of the sacred rice (*padi pun*) of his *bilek* family. Dressed in an *ikat* jacket, worn in honour of the sacred rice, he is taking part in a ritual to celebrate the conclusion of the harvest. Photograph taken on 20th May, 1950; Sungai Sut, Kapit District. 415 482 291

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22. This photograph shows the steepness of the hill-sides that are sometimes cultivated by the Iban. The felled trees are those of mature secondary jungle (*damun*). Photograph taken on 15th October, 1949, about three weeks after the burn which was a very poor one; Sungai Sut, Kapit District.

23. The growth in the background is *dijap kampong* about nine months in age: an example of regeneration from virgin land (*kampong*) which had been farmed for the first time during the previous year. The land in the foreground, from which the *padi* has just been reaped, has been cultivated for two years in succession. Photograph taken on 21st February, 1951; Sungai Sut, Kapit District.

24. The evils to which excessive cultivation leads: erosion and the invasion of the land by Imperata and other weeds. (Sheet erosion such as this is rare on Iban farms however, and this was the worst case encountered). Photograph taken on 3rd December, 1949; Sungai Tiau, Ulu Mujong, Kapit District.

1: Freeman E-5 (1949-1951) 1955 OC6 Iban OC6

p. 146a

243X
313
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Plate 1. Iban farm clearings in Sungai Saban, Ulu Sut, Kapit District, Third Division, Sarawak.

243X
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Plate 2. Farm clearing in virgin jungle, Upper Batang Baleh, Kapit District

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

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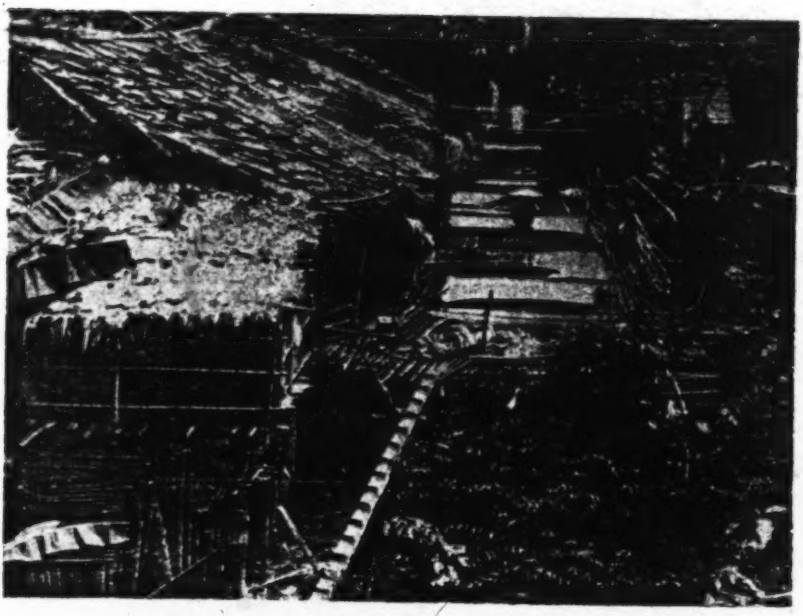

Plate 3. An Iban *dampa* or subsidiary long-house.

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Plate 4. An Iban long-house surrounded by farm clearings, Sungai Bangit, Kapit District.

1: Freeman E-5 (1949-1951)1955 OC6 Iban OC6

p. 146c

243x
245

Plate 5. An Iban *padi* farm bordered by a grove of sago palms, Sungai Tiau Kapit District.

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Plate 6. An Iban farm house (*dampa*) with secondary jungle (*damun*) in the background.

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Plate 7. Felling virgin jungle.

Plate 8. Newly felled secondary jungle (*damun*) drying in the sun.

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Pl. 146 a

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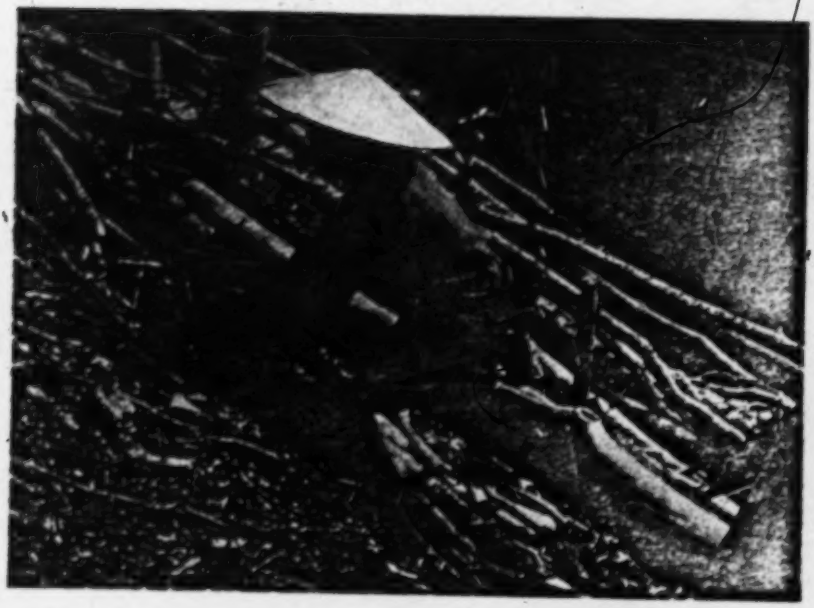

Plate 9. Secondary burning (*ngebak*).

243X
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Plate 10. Dibbling in progress.

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Plate 11. An Iban woman sowing *padi*.

Plate 12. A young Iban girl amid ripening *padi*.

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Plate 13. Setting a spear-trap (*peti*) against wild pigs.

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Plate 14. A watch-house (*langkau umai*) built in the centre of a farm.

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291
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x243

Plate 15. An Iban woman guarding her farm.

x243
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Plate 16. An Iban woman reaping *padi* by hand.

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Plate 17. An Iban youth carrying freshly reaped *padi* back to the long-house.

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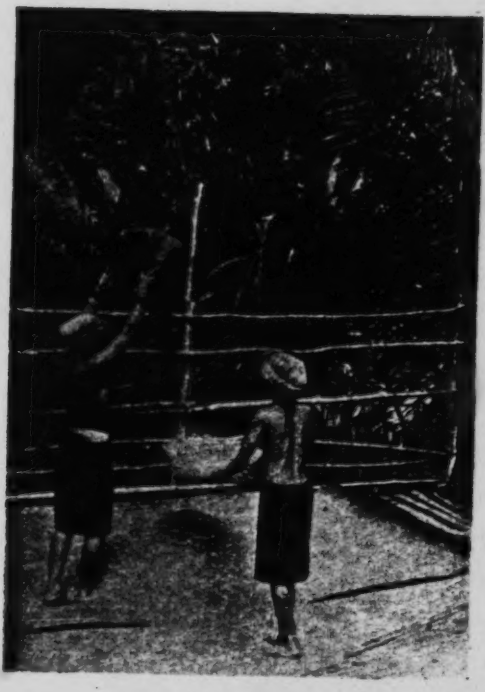

Plate 18. Two Iban women winnowing their *padi*.

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X243

Plate 19. An Iban woman planting magical plants (*senghenyang*) to protect her *padi*.

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Plate 20. An old man and his daughter making an offering to the *padi* spirits.

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Plate 21. A young Iban man carrying the seed of his sacred rice (*padi pun*) in a reaping basket (*sintong*).

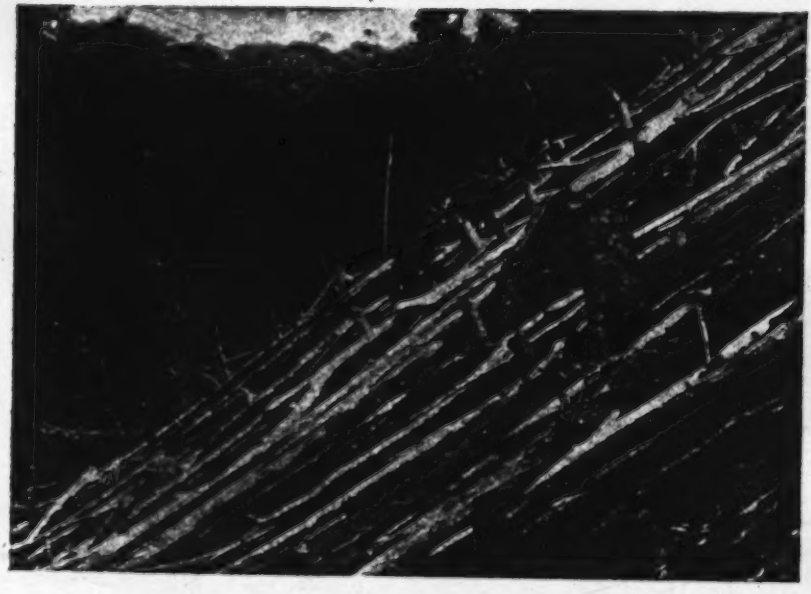

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Plate 22. A steep slope being prepared for cultivation.

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Plate 23. The growth in the background is regeneration (about 9 months in age) from virgin jungle after a single cropping.

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Plate 24. The evils to which excessive cultivation leads: erosion and the invasion of the land by Imperata.

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/For information pertaining to the shifting cultivation of hill rice, see Category 116, the title page, pp. 21-23, 27-35, 39-71, 75-99, 109-10, 116-19, 127-37, 139-40, 144-46, and pp. 146 a, c, e, f, h, i, j, k./

[A good map, indicating both Iban population distribution and the internal administrative boundaries of Sarawak, may be found in category 116, 1: Freeman, p. 12.]